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PART I.
Definitions.

See Update to Part I, Dec2008, Rev MM
9 VAC 5-91-10. General.

A. For the purpose of this chapter and subsequent amendments or any orders issued by the board, the words or terms shall have the meanings given them in 9 VAC 5-91-20.

B. Unless specifically defined in the Virginia Motor Vehicle Emissions Control Law (§ 46.2-1176 et seq. of the Code of Virginia) or in this chapter, terms used shall have the meanings given them by 9 VAC 5-170-20 (definitions, Regulation for General Administration) or commonly ascribed to them by recognized authorities, in that order of priority.

9 VAC 5-91-20. Terms defined.

"Aborted test" means an emissions inspection procedure that has been initiated by the inspector but stopped and not completed due to inspector error or a vehicular problem that prevents completion of the test. Aborted tests are not tests that cannot be completed due to a "failed/invalid" result caused by an exhaust dilution problem or an engine condition that prevents the inspection from being completed.

"Acceleration Simulation Mode (ASM) test" means a dynamometer-based emissions test performed in one or more, discreet, simulated road speed and engine load modes, and equipment which can be used to perform any such test.

"Access code" means the security phrase or number which allows authorized station personnel, the department, and analyzer service technicians to perform specific assigned functions using the certified analyzer system, as determined by the department. Depending on the assigned function, the access code is a personal password, a state password or a service password. Access code is not an identification number, but is used as an authenticator along with the identification number where such number is needed to perform specific tasks.

"Actual gross weight" means the gross vehicle weight rating (GVWR).

"Administrator" means the administrator of the U.S. Environmental Protection Agency (EPA) or an authorized representative.

"Affected motor vehicle" means any motor vehicle which:

1. Was manufactured or designated by the manufacturer as a model year less than twenty-five calendar years prior to January 1 of the present calendar year according to the formula, the current calendar year minus 24, except those identified by remote sensing as specified in subdivision 5 of this definition; *[Example: On 01/01/2005, only 1981 and newer motor vehicles are "affected motor vehicles."]*

2. Is designed for the transportation of persons or property;

3. Is powered by an internal combustion engine; and

4. For the Northern Virginia Emissions Inspection Program, has an actual gross weight of 10,000 pounds or less.

5. For vehicles subject to the remote sensing requirements of 9 VAC 5-91-180, was designated by the manufacturer as a model year 1968 or newer.

The term "affected motor vehicle" does not mean any:

1. Vehicle powered by a clean special fuel as defined in § 58.1-2101 of the Code of Virginia, provided the federal Clean Air Act permits such exemptions for vehicles powered by clean special fuels;

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2. Motorcycle;

3. Vehicle which, at the time of its manufacture, was not designed to meet emissions standards set or approved by the federal government;

4. Any antique motor vehicle as defined in § 46.2-100 of the Code of Virginia and licensed pursuant to § 46.2-730 of the Code of Virginia;

5. Fire fighting equipment, rescue vehicle, or ambulance;

6. Vehicle for which no testing standards have been adopted by the board; or

7. Tactical military vehicle.

"Air intake systems" means those systems which allow for the induction of ambient air (to include preheated air) into the engine combustion chamber for the purpose of mixing with a fuel for combustion.

"Air pollution" means the presence in the outdoor atmosphere of one or more substances which are or may be harmful or injurious to human health, welfare or safety; to animal or plant life; or to property; or which unreasonably interfere with the enjoyment by the people of life or property.

"Air Pollution Control Law" means Chapter 13 (§ 10.1-1300 et seq.) of Title 10.1 of the Code of Virginia.

"Air system" means a system for providing supplementary air to promote further oxidation of hydrocarbons and carbon monoxide gases and to assist catalytic reaction.

"Alternative fuel" means an internal combustion engine fuel other than (i) gasoline, (ii) diesel, or (iii) fuel mixtures containing more than 15% volume of gasoline.

"Alternative method" means any method of sampling and analyzing for an air pollutant which is not a reference method, but which has been demonstrated to the satisfaction of the board, in specific cases, to produce results adequate for its determination of compliance.

"Authorized personnel" means department personnel, an individual designated by analyzer manufacturer, station owner, licensed emissions inspector, station manager or other person as designated by the station manager.

"Basic engine systems" means those parts or assemblies which provide for the efficient conversion of a compressed air and fuel charge into useful power to include but not limited to valve train mechanisms, cylinder head to block integrity, piston-ring-cylinder sealing integrity and post-combustion emissions control device integrity.

"Bi-fuel" means any motor vehicle capable of operating on one of two different fuels, usually gasoline and an alternative fuel, but not a mixture of the fuels. That is, only one fuel at a time.

"Board" means the State Air Pollution Control Board or its designated representative.

"Calibration" means establishing or verifying the response curve of a measurement device using several different measurements having precisely known quantities.

"Calibration gases" means gases of precisely known concentrations that are used as references for establishing or verifying the response curve of a measurement device.

"Canister" means a mechanical device capable of adsorbing and retaining hydrocarbon vapors.

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"Catalytic converter" means a post combustion device which oxidizes hydrocarbons, carbon monoxide gases, and may also reduce oxides of nitrogen.

"Certificate of emissions inspection" means a document, device, or symbol, whether recorded in written or electronic form, as prescribed by the director and issued pursuant to this chapter, which indicates that (i) an affected motor vehicle has satisfactorily complied with the emissions standards and passed the emissions inspection provided for in this chapter; (ii) the requirement of compliance with the emissions standards has been temporarily waived; or (iii) the affected motor vehicle has failed the emissions inspection.

"Certified emissions repair facility" means a facility, or portion of a facility, that has obtained a certification in accordance with Part VII (9 VAC 5-91-500 et seq.) to perform emissions related repairs on motor vehicles.

"Certified emissions repair technician" means a person who has obtained a certification in accordance with Part VIII (9 VAC 5-91-550 et seq.) to perform emissions related repairs on motor vehicles.

"Certified enhanced analyzer system" or "analyzer system" means the complete system that samples and reads concentrations of hydrocarbon, carbon dioxide, nitric oxides and carbon monoxide gases and that is approved by the department for use in the Enhanced Emissions Inspection Program in accordance with Part X (9 VAC 5-91-640 et seq.). The system includes the exhaust gas handling system, the exhaust gas analyzer, evaporative system pressure test equipment, associated automation hardware and software, data media, the analyzer system cabinet, the dynamometer and appurtenant devices, vehicle identification equipment, and associated cooling and exhaust fans and gas cylinders.

"Certified thermometer" means a laboratory grade ambient temperature measuring device with a range of at least 20°F through 120°F, and an attested accuracy of at least 1°F with increments of 1°, with protective shielding.

"Chargeable inspection" means a completed inspection, on an affected motor vehicle, for which the station owner is entitled to collect an inspection fee. No fee shall be paid for (i) inspections for which a certificate of emissions inspection has not been issued, (ii) inspections that are conducted by the department for referee purposes, (iii) inspections which were ordered due to on-road test failures but which result in an emissions inspection "pass" at an inspection station, or (iv) the first reinspection done at the same station that performed the initial inspection within 14 days. An inspection ordered by the department due to an on-road test failure that results in a confirmation test failure at an emissions inspection station is a chargeable inspection.

"Confirmation test" means an emissions inspection required due to a determination that the vehicle exceeds the exhaust emissions standards prescribed in Table III-B in 9 VAC 5-91-180 for on-road testing through remote sensing. The confirmation emissions inspection procedure may include an exhaust test (ASM or TSI), OBD system test or both.

"Consent order" means a mutual agreement between the department and any owner, operator, emissions inspector, or emissions repair technician that such owner or other person will perform specific actions for the purpose of diminishing or abating the causes of air pollution or for the purpose of coming into compliance with this chapter. A consent order may include agreed upon civil charges. Such orders may be issued without a formal hearing.

"Curb idle" means vehicle operation whereby the transmission is disengaged and the engine is operated with the throttle in the closed or idle stop position with the resultant engine speed between 400 and 1250 revolutions per minute (rpm), or at another idle speed if so specified by the manufacturer.

"Data handling system" means all the computer hardware, software and peripheral equipment used to conduct emissions inspections and manage the enhanced emissions inspection program.

"Data medium" or "data media" means the medium contained in the certified analyzer system and

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used to electronically record test data.

"Day" means a 24-hour period beginning at midnight.

"Dedicated alternative fuel vehicle" means a vehicle that was configured by the vehicle manufacturer to operate only on one specific fuel other than (i) gasoline, (ii) diesel, or (iii) fuel mixtures containing more than 15% by volume of gasoline.

"Dedicated-fuel vehicle" means a vehicle that was designed and manufactured to operate and operates on one specific fuel.

"Department" means any employee or other representative of the Virginia Department of Environmental Quality, as designated by the director.

"Director" means the director of the Virginia Department of Environmental Quality or a designated representative.

"Dual fuel" means a vehicle which operates on a combination of fuels, usually gasoline or diesel and an alternative fuel, at the same time. That is, the mixed fuels are introduced into the combustion chamber of the engine.

"Emissions control equipment" means any part, assembly or equipment originally installed by the manufacturer in or on a motor vehicle for the sole or primary purpose of reducing emissions.

"Emissions control systems" means any system consisting of parts, assemblies or equipment originally installed by the manufacturer in or on a motor vehicle for the primary purpose of reducing emissions.

"Emissions inspection" means an emissions inspection of a motor vehicle performed by an emissions inspector employed by or working at an emissions inspection station or fleet emissions inspection station, using the tests, procedures, and provisions set forth in this chapter.

"Emissions inspection station" means a facility or portion of a facility which has obtained an emissions inspection station permit from the director authorizing the facility to perform emissions inspections in accordance with the provisions of this chapter.

"Emissions inspector" means a person licensed by the department to perform inspections of vehicles required under the Virginia Motor Vehicle Emissions Control Law and is qualified in accordance with this chapter.

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"Emissions standard" means any provision of Part III (9 VAC 5-91-160 et seq.) or Part XIV (9 VAC 5-91-790 et seq.) which prescribes an emission limitation, or other emission control requirements for motor vehicle air pollution.

"Empty weight (EW)" means that weight stated as the EW on a Virginia motor vehicle registration or derived from the motor vehicle title or manufacturer's certificate of origin. The EW may be used to determine emissions inspection standards.

"Enhanced emissions inspection program" means a motor vehicle emissions inspection including procedures, emissions standards, and equipment required by 40 CFR Part 51, Subpart S or equivalent and consistent with applicable requirements of the federal Clean Air Act. The director will administer the enhanced emissions inspection program. Under the Virginia Motor Vehicle Emissions Control Law, the program requires that affected motor vehicles, unless otherwise exempted, receive biennial inspections at official emissions inspection stations, which may be test and repair facilities, in accordance with this chapter. Nothing in this program shall bar enhanced emissions inspection stations or facilities from also performing vehicle repairs.

"EPA" means the United States Environmental Protection Agency.

"Equivalent test weight (ETW)" or "emission test weight" means the weight of a motor vehicle as automatically determined by the emissions analyzer system based on vehicle make, model, body, style, model year, engine size, permanently installed equipment, and other manufacturer and aftermarket supplied information, and used for the purpose of assigning dynamometer resistance and exhaust emissions standards for the conduct of an exhaust emissions inspection.

"Evaporative system pressure test" or "pressure test" means a physical test of the evaporative emission control system on a motor vehicle to determine whether the evaporative system vents emissions of volatile organic compounds from the fuel tank and fuel system to an on-board emission control device, and prevents their release to the ambient air under normal vehicle operating conditions. Such testing shall only be conducted at emissions inspection stations upon installation of approved equipment and software necessary for performing the test, as determined by the director.

"Exhaust gas analyzer" means an instrument which is capable of measuring the concentrations of certain air pollutants in the exhaust gas from a motor vehicle.

"Facility" means something that is built, installed or established to serve a particular purpose; includes, but is not limited to, buildings, installations, public works, businesses, commercial and industrial plants, shops and stores, apparatus, processes, operations, structures, and equipment of all types.

"Federal Clean Air Act" means 42 USC § 7401 et seq.

"Fleet" means 20 or more motor vehicles which are owned, operated, leased or rented for use by a common owner.

"Fleet emissions inspection station" means any inspection facility operated under a permit issued to a qualified fleet owner or lessee as determined by the director.

"Flexible-fuel vehicle" means any motor vehicle capable of operating on two or more fuels, either one at a time or any mixture of two or more different fuels.

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"Formal hearing" means a board or department process that provides for the right of private parties to submit factual proofs as provided in § 2.2-4020 of the Administrative Process Act in connection with case decisions. Formal hearings do not include the factual inquiries of an informal nature provided in § 2.2-4019 of the Administrative Process Act.

"Fuel control systems" means those mechanical, electro-mechanical, galvanic or electronic parts or assemblies which regulate the air-to-fuel ratio in an engine for the purpose of providing a combustible charge.

"Fuel filler cap pressure test" or "gas cap pressure test" means a test of the ability of the fuel filler cap to prevent the release of fuel vapors from the fuel tank under normal operating conditions.

"Gas span" means the adjustment of an exhaust gas analyzer to correspond with known concentrations of gases.

"Gas span check" means a procedure using known concentrations of gases to verify the gas span adjustment of an analyzer.

"Gross vehicle weight rating (GVWR)" means the maximum recommended combined weight of the motor vehicle and its load as prescribed by the manufacturer and is (i) expressed on a permanent identification label affixed to the motor vehicle; (ii) stated on the manufacturer's certificate of origin; or (iii) coded in the vehicle identification number. If the GVWR can be determined it shall be one element used to determine emissions inspection standards and test type. If the GVWR is unavailable, the department may make a determination based on the best available evidence including manufacturer reference, information coded in the vehicle identification number, or other available sources of information from which to make the determination.

"Heavy duty gasoline vehicle (HDGV)" means a heavy duty vehicle using gasoline as its fuel.

"Heavy duty vehicle (HDV)" means any affected motor vehicle (i) which is rated at more than 8,500 pounds GVWR or (ii) which has a loaded vehicle weight or GVWR of more than 6,000 pounds and has a basic frontal area in excess of 45 square feet.

"High emitter index" means the method of categorizing the probable emissions inspection failure-rates of engine families. Values within the index are determined by computing the percentile of the historical emissions inspection failure-rate of a specific engine family, i.e. a specific group of vehicles with the same vehicle type, year, make and engine size, to the historical emissions inspection failure-rate of all engine families in a specific model year group. Failure rates are based on the most recent full year of emissions inspection test data from the Virginia Motor Vehicle Emissions Control Program. Vehicles with a index value above 75 are considered "high-emitters."

"Identification number" means the number assigned by the department to uniquely identify department personnel, an emissions inspection station, a certified emissions repair facility, a licensed emissions inspector, a certified emissions repair technician or other authorized personnel as necessary for specific tasks.

"Idle mode" means a condition where the vehicle engine is warm and running at the rate specified by the manufacturer as curb idle, where the engine is not propelling the vehicle, and where the throttle is in the closed or idle stop position.

"Ignition systems" means those parts or assemblies which are designed to cause and time the ignition of a compressed air and fuel charge.

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"Implementation Plan" means the plan, including any revision thereof, which has been submitted by the Commonwealth and approved in Subpart VV of 40 CFR Part 52 by the administrator under § 110 of the federal Clean Air Act, or promulgated in Subpart VV of 40 CFR Part 52 by the administrator under § 110(c) of the federal Clean Air Act, or promulgated or approved by the administrator pursuant to regulations promulgated under § 301(d) of the federal Clean Air Act and which implements the relevant requirements of the federal Clean Air Act.

"Informal fact finding" means an informal conference or consultation proceeding used to ascertain the fact basis for case decisions as provided in § 2.2-4019 of the Administrative Process Act.

"Initial inspection" means the first complete emissions inspection of a motor vehicle conducted in accordance with the biennial inspection requirement and for which a valid vehicle emissions inspection report was issued. Any test following the initial inspection is a retest or reinspection.

"Inspection area" means the area that is occupied by the certified analyzer system and the vehicle being inspected.

"Inspection fee" means the amount of money that the emissions inspection station may collect from the motor vehicle owner for each chargeable inspection.

"Light duty gasoline vehicle (LDGV)" means a light duty vehicle using gasoline as its fuel.

"Light duty gasoline truck (LDGT1)" means a light duty truck 1 using gasoline as its fuel.

"Light duty gasoline truck (LDGT2)" means a light duty truck 2 using gasoline as its fuel.

"Light duty truck (LDT)" means any affected motor vehicle which (i) has a loaded vehicle weight or GVWR of 6,000 pounds or less and meets any one of the criteria below; or (ii) is rated at more than 6,000 pounds GVWR but less than 8,500 pounds GVWR and has a basic vehicle frontal area of 45 square feet or less; and meets one of the following criteria:

1. Designed primarily for purposes of transportation of property or is a derivation of such a vehicle.
2. Designed primarily for transportation of persons and has a capacity of more than 12 persons.
3. Equipped with special features enabling off-street or off-highway operation and use.

"Light duty truck 1 (LDT1)" means any light duty truck rated at 6,000 pounds GVWR or less. LDT1 is a subset of light duty trucks.

"Light duty truck 2 (LDT2)" means any light duty truck rated at greater than 6,000 pounds GVWR. LDT2 is a subset of light duty trucks.

"Light duty vehicle (LDV)" means an affected motor vehicle that is a passenger car or passenger car derivative capable of seating 12 passengers or less.

"Loaded vehicle weight (LVW)" or "curb weight" means the weight of a vehicle and its standard equipment; i.e., the empty weight as recorded on the vehicle's registration or the base shipping weight as recorded in the vehicle identification number, whichever is greater; plus the weight of any permanent attachments, the weight of a nominally filled fuel tank, plus 300 pounds.

"Locality" means a city, town, or county created by or pursuant to state law.

"Mobile fleet emissions inspection station" means a facility or entity which provides emissions inspection equipment or services to a fleet emissions inspection station on a temporary basis. Such equipment is not permanently installed at the fleet facility but is temporarily located at the fleet facility for

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the sole purpose of testing vehicles owned, operated, leased or rented for use by a common owner.

"Model year" means, except as may be otherwise defined in this chapter, the motor vehicle manufacturer's annual production period which includes the time period from January 1 of the calendar year prior to the stated model year to December 31 of the calendar year of the stated model year; provided that, if the manufacturer has no annual production period, the term "model year" shall mean the calendar year of manufacture. For the purpose of this definition, model year is applied to the vehicle chassis, irrespective of the year of manufacture of the vehicle engine.

"Motor vehicle" means any motor vehicle as defined in § 46.2-100 of the Code of Virginia as a motor vehicle and that:

1. Is designed for the transportation of persons or property; and
2. Is powered by an internal combustion engine.

"Motor vehicle dealer" means a person who is licensed by the Department of Motor Vehicles in accordance with §§ 46.2-1500 and 46.2-1508 of the Code of Virginia.

"Motor vehicle inspection report" means a printed certificate of emissions inspection that is a report of the results of an emissions inspection. It indicates whether the motor vehicle has (i) passed, (ii) failed, or (iii) obtained a temporary emissions inspection waiver. It may also indicate whether the emissions inspection could not be completed due to an exhaust dilution or an engine condition which prevents the inspection from being completed. The report shall accurately identify the motor vehicle and shall include inspection results, recall information provided by the department, warranty and repair information, and a unique identification number.

"Motor vehicle owner" means any person who owns, leases, operates, or controls a motor vehicle or fleet of motor vehicles.

"Nonconforming vehicle" means a vehicle not manufactured for sale in the United States to conform to emissions standards established by the federal government.

"Normal business hours" for emissions inspection stations, means a daily eight-hour period Monday through Friday, between the hours of 8 a.m. and 6 p.m., with the exception of national holidays, state holidays, temporary closures noticed to the department and closures due to the inability to meet the requirements of this chapter. Nothing in this chapter shall prevent stations from performing inspections at other times in addition to the "normal business hours." Emissions inspection stations may, with the approval of the department, substitute a combined total of eight hours, between 8 a.m. and 6 p.m., over a weekend period for one weekday as their "normal business hours" for conducting emission inspections. Emissions inspection stations shall post inspection hours.

"Northern Virginia emissions inspection program" means the emissions inspection program required by this chapter in the Northern Virginia program area.

"Northern Virginia program area" or "program area" means the territorial area encompassed by the boundaries of the following localities: the counties of Arlington, Fairfax, Loudoun, Prince William, and Stafford; and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park.

"On-board diagnostic system (OBD system)" means the computerized emissions control diagnostic system installed on model year 1996 and newer affected motor vehicles.

"On-board diagnostic system test (OBD system test)" means an evaluation of the OBD system pursuant to 40 CFR 86.094-17 according to procedures specified in 40 CFR 85.2222 and this chapter.

"On-board diagnostic vehicle (OBD vehicle)" means a model year 1996 and newer model affected motor vehicle equipped with an on-board diagnostic system and meeting the requirements of 40 CFR

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"On-road testing" means tests of motor vehicle emissions or emissions control devices by means of roadside pullovers or remote sensing devices.

"Operated primarily" means [motor] vehicle operation which constitutes routine operation into or within the program area as evidenced by observation using remote sensing equipment at least three times in a 60 day period with no less than 30 days between the first and last observation. The director may increase the number of observations required for compliance determination if, in his discretion, based on program experience, such an increase would not significantly adversely impact the objectives of this chapter. The term "operated primarily" shall be used to identify motor vehicle operation that is subject to the exhaust emission standards for on-road testing through remote sensing set forth in 9 VAC 5-91-180. The term "operated primarily" shall not be used to identify motor vehicle operation which will subject the vehicle to the compliance provisions set forth in 9 VAC 5-91-160 and 9 VAC 5-91-170 for biennial emissions inspections.

"Order" means any decision or directive of the board or the director, including orders, consent orders, and orders of all types rendered for the purpose of diminishing or abating the causes of air pollution or enforcement of this chapter. Unless specified otherwise in this chapter, orders shall only be issued after the appropriate administrative proceeding.

"Original condition" means the condition of the vehicle, parts, and components as installed by the manufacturer but not necessarily to the original level of effectiveness.

"Owner" means any person who owns, leases, operates, controls or supervises a facility or motor vehicle.

"Party" means any person who actively participates in the administrative proceeding or offers comments through the public participation process and is named in the administrative record. The term "party" also means the department.

"Person" means an individual, corporation, partnership, association, a governmental body, a municipal corporation, or any other legal entity.

"Pollutant" means any substance the presence of which in the outdoor atmosphere is or may be harmful or injurious to human health, welfare or safety, to animal or plant life, or to property, or which unreasonably interferes with the enjoyment by the people of life or property.

"Referee station" means those facilities operated or used by the department to (i) determine program effectiveness, (ii) resolve emissions inspection conflicts between motor vehicle owners and emissions inspection stations, and (iii) provide such other technical support and information, as appropriate, to emissions inspection stations and motor vehicle owners.

"Reference method" means any method of sampling and analyzing for an air pollutant as described in Appendix A of 40 CFR 60.

"Reinspection" or "retest" means a type of inspection selected by the department or the emissions inspector when a request for an inspection is due to a previous failure. Any inspection that occurs 120 days or less following the most recent chargeable inspection is a retest.

"Rejected" or "Rejected from testing" means that the vehicle cannot be inspected due to conditions in accordance with 9 VAC 5-91-420 C or 9 VAC 5-91-420 G 3.

"Remote sensing" means the observation, measurement, and recordation of motor vehicle exhaust emissions from motor vehicles while travelling on roadways or in specified areas by specialized equipment. Such equipment may use light sensing and electronic stimuli in conjunction with devices, including videographic and digitized images, to detect and record vehicle identification information, such as registration or other identification numbers.

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"Sensitive mission vehicle" means any vehicle which, for law enforcement or national security reasons, cannot be tested in the public inspection system and must not be identified through the fleet testing system. For such vehicles, an autonomous fleet testing system may be established by agreement between the controlling agency and the director.

"Span gas" means gases of known concentration used as references to adjust or verify the accuracy of an exhaust gas analyzer that are approved by the department and are so labeled.

"Standard conditions" means a temperature of 20°C (68°F) and a pressure of 760 mm of Hg (29.92 inches of Hg). *[Note: parenthetical reference should read, "(29.92 inches of H₂O)."]*

"Standardized instruments" means laboratory instruments calibrated with precision gases traceable to the National Institute of Standards and Technology and accepted by the department as the standards to be used for comparison purposes. All candidate instruments are compared in performance to the standardized instruments.

"Tactical military vehicle" means any motor vehicle designed to military specifications or a commercially designed motor vehicle modified to military specifications to meet direct transportation support of combat, tactical, or military relief operations, or training of personnel for such operations.

"Tampering" means to alter, remove or otherwise disable or reduce the effectiveness of emissions control equipment on a motor vehicle.

"Test" means an emissions inspection of a vehicle, or any portion thereof, performed by an emissions inspector at an emissions inspection station, using the procedures and provisions set forth in this chapter.

"Test and repair" means motor vehicle emissions inspection stations which perform emissions inspections and may also perform vehicle repairs. No provision of this chapter shall bar emissions inspection stations from also performing vehicle repairs.

"Thermostatic air cleaner" means a system that supplies temperature regulated air to the air intake system during engine operation.

"True concentration" means the concentration of the gases of interest as measured by a standardized instrument which has been calibrated with 1.0% precision gases traceable to the National Bureau of Standards.

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"Two speed idle test" or "TSI" means a vehicle exhaust emissions test, performed in accordance with section (II) of 40 CFR Part 51, Appendix B to Subpart S, which measures the concentrations of pollutants in the exhaust gases of an engine (i) while the motor vehicle transmission is not propelling the vehicle and (ii) while the engine is operated at both curb idle and at a nominal engine speed of 2,500 rpm.

"Vehicle specific power (VSP)" means an indicator expressed as a function of vehicle speed, acceleration, drag coefficient, tire rolling resistance and roadway grade that is used to characterize the load a vehicle is operating under at the time and place a vehicle is measured by remote sensing equipment. It is calculated using the following formula:

$$\text{VSP} = 4.39 \times \text{Sine} (\text{Site Grade in Degrees}/57.3) \times \text{Speed} + \text{K1} \\ \times \text{Speed} \times \text{Acceleration} + \text{K2} \times \text{Speed} + \text{K3} \times \text{Speed}^3.$$

Where:

VSP = vehicle specific power indicator;

Sine = the trigonometric function that for an acute angle is the ratio between the side opposite the angle when it is considered part of a right triangle and the hypotenuse;

Site Grade in Degrees = slope of road where remote sensing measurement is taken;

K1, K2 and K3 = empirically determined coefficients specific to the weight class of the vehicle;

Speed = rate of motion in miles per hour of vehicle at the time remote sensing measurement is taken; and

Acceleration = change in speed in miles per hour per second.

For light duty vehicles the values for K1, K2 and K3 are respectively 0.22, 0.0954 and 0.0000272. Based on EPA guidance, the department may develop different values for K1, K2 and K3 that are applicable to heavy duty vehicles or to specific classes of light duty vehicles.

"Virginia Motor Vehicle Emissions Control Program" means the program for the inspection and control of motor vehicle emissions established by Virginia Motor Vehicle Emissions Control Law.

"Virginia Motor Vehicle Emissions Control Law" means Article 22 (§ 46.2-1176 et seq.) of Chapter 10 of Title 46.2 of the Code of Virginia.

"Visible smoke" means any air pollutant, other than visible water droplets, consisting of black, gray, blue or blue-black airborne particulate matter emanating from the exhaust system or crankcase. Visible smoke does not mean steam.

"Zero gas" means a gas, usually air or nitrogen, which is used as a reference for establishing or verifying the zero point of an exhaust gas analyzer.

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PART II.
General Provisions.

9 VAC 5-91-30. Applicability and authority of the department.

A. The provisions of this chapter, unless specified otherwise, apply to the following:

1. Any owner of an affected motor vehicle, including new motor vehicles, specified in subsection B of this section. References made to responsibilities or requirements applicable to an affected motor vehicle shall mean that the owner shall be responsible for compliance with all applicable provisions of this chapter.

2. Any owner of an emissions inspection station or fleet emissions inspection station under the auspices of the enhanced emissions inspection program. References made to responsibilities or requirements of emissions inspection stations or fleet emissions inspection stations shall mean that the owner, permittee or certificate holder, as appropriate, shall be responsible for compliance with all applicable provisions of this chapter.

3. Any person who conducts an emissions inspection under the auspices of the enhanced emissions inspection program.

4. Any owner of an emissions repair facility performing emissions repairs on motor vehicles affected by this chapter. References made to responsibilities or requirements of certified emissions repair facilities shall mean that the owner, permittee or certificate holder, as appropriate, shall be responsible for compliance with all applicable provisions of this chapter.

5. Any emissions repair technician performing emissions repairs on motor vehicles affected by this chapter.

B. The provisions of this chapter, unless specified otherwise, apply to the following affected motor vehicles:

1. Any affected motor vehicle, including new motor vehicles, registered by the Virginia Department of Motor Vehicles and garaged within the Northern Virginia program area.

2. Any affected motor vehicle, including new motor vehicles, registered by the Virginia Department of Motor Vehicles and garaged outside of the Northern Virginia program area but operated primarily in the Northern Virginia program area.

3. Any affected motor vehicle, including new motor vehicles not registered by the Department of Motor Vehicles but operated primarily in the Northern Virginia program area.

4. Any affected motor vehicle, including new motor vehicles owned or operated as part of a fleet located outside the Northern Virginia program area but operated primarily in the Northern Virginia program area.

C. As provided in the Virginia Motor Vehicle Emissions Control Law, affected motor vehicles shall be submitted for biennial emissions inspections and shall be in compliance with this chapter.

1. Motor vehicles having obtained a valid enhanced emissions inspection pass from another program area or another state within the most recent 12 months may be determined by the director to be in compliance with the enhanced emissions inspection required by this chapter for initial registration in Virginia. The valid period for such emissions inspection shall be one year. The proof of emissions inspection results from an enhanced emissions inspection program shall be presented to the Department of Motor Vehicles in such cases. The vehicle and proof of compliance may be presented to the department for verification purposes in order to resolve questions or disputes. Such vehicles are subject to all other provisions of this chapter.

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2. The director may temporarily defer the emissions inspection requirement for motor vehicles registered in but temporarily located outside the program area at the time of such requirement based on information including, but not limited to, the location of the vehicle, the reason for and length of its temporary location, and demonstration that it is not practical or reasonable to return the vehicle to the program area for inspection. All such information shall be provided by the owner and is subject to verification by the department.

D. Motor vehicles being titled for the first time shall be considered to have an enhanced emissions inspection valid for two years. Such vehicles are not exempt from the emissions inspection program and are subject to all other provisions of this chapter.

E. Pursuant to § 46.2-1180 B of the Motor Vehicle Emissions Control Law, motor vehicles of the current model year and the four immediately preceding model years, held for resale in a licensed motor vehicle dealer's inventory, may be registered for one year upon sale without obtaining an emissions inspection in accordance with conditions enumerated below.

1. The vehicle must be registered in the program area.

2. The vehicle has not failed nor received a waiver during its most recent emissions inspection.

3. The vehicle has not previously been registered under the provisions of this subsection.

4. The motor vehicle dealer guarantees in writing to the customer and to the department that the emissions equipment on the motor vehicle is operating in compliance with the warranty of the manufacturer or distributor, or both if applicable, at the time of sale.

a. The document supplied must describe the method by which this compliance was determined and provide a copy of any emissions readings obtained from the vehicle for the purpose of making this showing.

b. The document must state in prominent or bold print that the certification in no way warrants or guarantees that the vehicle complied with the emission standards used in the Virginia enhanced emissions inspection program, or similar language approved by the department and that the customer has a right to request an emissions inspection, which may be at the expense of the customer, in lieu of the one year emissions validation period authorized by this subsection.

5. A written request, including the documentation cited above, must be presented to the department not more than 30 days prior to the date of sale so that the department can record such temporary emissions validation period and furnish it to the Department of Motor Vehicles.

6. Such temporary validation period shall not be granted more than once for any motor vehicle.

7. For the purposes of this subsection, any used motor vehicle will be considered to be one model year old on the first day of October of the next calendar year after the model year described on the vehicle title or registration, and shall increase in age by one year on the first day of each October thereafter.

F. Owners or operators of fleets, including fleets of government vehicles and sensitive mission vehicles, shall provide a report to the department annually containing information regarding vehicles operated in the program area sufficient to determine compliance with this chapter. The report shall contain information deemed necessary by the department to determine compliance. Such information shall include, but not be limited to, (i) number of vehicles, (ii) compliance method, and (iii) results of any inspections. Reports shall be in a format and according to a schedule acceptable to the department.

G. Manufacturers and distributors of emissions testing equipment are prohibited from directly or

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indirectly owning or operating any emissions testing facility or having any direct or indirect financial interest in any such facility other than the leasing of or providing financing for equipment related to emissions testing.

H. The provisions of this chapter, unless specified otherwise, apply only to those pollutants for which emission standards are set forth in Part III (9 VAC 5-91-160 et seq.) and Part XIV (9 VAC 5-91-790 et seq.).

I. Applicants for inspection station permits and emissions repair facility certificates shall have a Virginia business license and the application shall only be for a facility in Virginia.

J. By the adoption of this chapter, the board confers upon the department the administrative, enforcement and decision making authority enumerated herein.

9 VAC 5-91-40. [Repealed]

9 VAC 5-91-41. [Repealed]

9 VAC 5-91-50. Documents incorporated by reference.

A. The Administrative Process Act and Virginia Register Act provide that state regulations may incorporate documents by reference. Throughout this chapter, documents of the types specified below have been incorporated by reference.

1. United States Code.
2. Code of Virginia.
3. Code of Federal Regulations.
4. Federal Register.
5. Technical and scientific reference documents.

Additional information on key federal regulations and nonstatutory documents incorporated by reference and their availability may be found in subsection E of this section.

B. Any reference in this chapter to any provision of the Code of Federal Regulations (CFR) shall be considered as the adoption by reference of that provision. The specific version of the provision adopted by reference shall be that contained in the latest revision to the CFR in effect on July 1, 2001. In making reference to the Code of Federal Regulations, 40 CFR Part 35 means Part 35 of Title 40 of the Code of Federal Regulations; 40 CFR 35.20 means § 35.20 in Part 35 of Title 40 of the Code of Federal Regulations.

C. Failure to include in this section any document referenced in this chapter shall not invalidate the applicability of the referenced document.

D. Copies of materials incorporated by reference in this section may be examined by the public at the central office of the Department of Environmental Quality, Air Division, Eighth Floor, 629 East Main Street, Richmond, Virginia, between 8:30 a.m. and 4:30 p.m. of each business day.

E. Information on federal regulations and nonstatutory documents incorporated by reference and their availability may be found below in this subsection.

1. Code of Federal Regulations.

a. The provisions specified below from the Code of Federal Regulations (CFR) are incorporated herein by reference:

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(1). 40 CFR Part 51 - Requirements for Preparation, Adoption and Submittal of Implementation Plans, specifically Subpart S (Inspection and Maintenance Program Requirements).

(2). 40 CFR Part 85 - Control of Air Pollution from Motor Vehicles and Motor Vehicle Engines, specifically Subpart W (Emission Control System Performance Warranty Short Tests).

b. Copies may be obtained from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402; phone (202) 783-3238.

2. Environmental Protection Agency, Motor Vehicle Emissions Laboratory.

a. The following document is incorporated herein by reference: Environmental Protection Agency technical report, "EPA Recommended Practice for Naming I/M Calibration Gas," EPA-AA-TSS-83-8-B, September 1983.

b. The following document is incorporated herein by reference: Environmental Protection Agency technical guidance, Acceleration Simulation Mode Test Procedures, Emission Standards, Quality Control Requirements, and Equipment Specifications," EPA-AA-RSPD-IM-96-2, July 1996.

c. Copies may be obtained from: Environmental Protection Agency, Office of Transportation and Air Quality, 2000 Traverwood, Ann Arbor, MI 48105.

3. Building Officials & Code Administrators International, Inc.

a. The following document is incorporated herein by reference: The BOCA National Mechanical Code/1993, Eighth Edition.

b. Copies may be obtained from: Building Officials & Code Administrators International, Inc., 4051 West Flossmoor Road, Country Club Hills, Illinois 60478-5795.

9 VAC 5-91-60. [Repealed]

9 VAC 5-91-70. Appeal of case decisions.

A. Any owner, emissions inspector, emissions repair technician, or other party significantly affected by any action of the director or the department taken without a formal hearing may request a formal hearing in accordance with § 2.2-4020 of the Administrative Process Act, provided a formal hearing has not been waived and a petition requesting such formal hearing is filed with the director within 30 days after notice of the action is mailed or delivered to such owner, emissions inspector, emissions repair technician, or party requesting notification of such action.

B. In cases where the director or the department fails to make a case decision within the time frame specified by § 2.2-4021, the owner, emissions inspector, emissions repair technician, or other party significantly affected, may provide written notice to the director that a decision is due in accordance with § 2.2-4021 of the Administrative Process Act. Appeals thereafter shall be in accordance with the Administrative Process Act.

C. Prior to any formal hearing, an informal fact finding shall be held pursuant to § 2.2-4019 of the Administrative Process Act, unless the named party and the director consent to waive the informal fact finding and go directly to a formal hearing.

D. Any decision of the director resulting from a formal hearing or from an informal fact finding wherein the parties have agreed to waive a formal hearing shall constitute the final decision for purposes of

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Article V (§ 2.2-4025 et seq.) of the Administrative Process Act.

E. Judicial review of any final decision shall be in accordance with Article V (§ 2.2-4025 et seq.) of the Administrative Process Act.

F. Nothing in this section shall prevent disposition of any case by consent.

G. Any petition for a formal hearing or any notice or petition for an appeal by itself shall not constitute a stay of decision or action.

9 VAC 5-91-80. [Repealed]

9 VAC 5-91-90. Right of entry.

Whenever it is necessary for the purposes of this chapter, the department may enter, at reasonable times, any establishment or upon any property, public or private, for the purpose of obtaining information or conducting surveys, audits or investigations as authorized by § 46.2-1187.1 of the Virginia Motor Vehicle Emissions Control Law.

9 VAC 5-91-100. Conditions on approvals.

A. The director may impose conditions upon permits, licenses, certifications and other approvals issued pursuant to this chapter, (i) which may be necessary to carry out the Virginia Motor Vehicle Emissions Control Law and (ii) which are consistent with this chapter. Except as specified herein, nothing in this chapter shall be understood to limit the power of the department in this regard.

B. A license, permit, or certification applicant may consider any condition imposed by the director as a denial of the requested permit, license, certification or other approval, which shall entitle the applicant to appeal the decision pursuant to 9 VAC 5-91-70.

C. The existence of a permit, license or certification under this chapter shall not constitute a defense to a violation of the Virginia Air Pollution Control Law, the Virginia Motor Vehicle Emissions Control Law or this chapter and shall not relieve any owner of the responsibility to comply with any applicable regulations, laws, ordinances and orders of any governmental entities having jurisdiction.

9 VAC 5-91-110. [Repealed]

9 VAC 5-91-120. Export and import of motor vehicles.

A. The catalyst and fuel filler inlet restrictor may be removed from, installed or reinstalled on used motor vehicles scheduled for shipment to or from a foreign country provided that:

1. The export or import of the motor vehicle meets the provisions of subsection B of this section; and

2. The removal of the emissions control equipment does not take place prior to 10 days before the vehicle is turned over to the port authorities and the reinstallation of the emissions control equipment takes place within 10 days after receipt of the vehicle by the motor vehicle owner from the port authorities in the United States if such equipment is required for the vehicle configuration.

B. To be exempted under the provisions of subsection A of this section, the motor vehicle must:

1. Be exported or imported under a U.S. Environmental Protection Agency approved catalyst control program;

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2. Be exported or imported under a Department of Defense privately owned vehicle import control program; or

3. Be entered through U.S. Customs under cash bond and formal entry procedures, (19 CFR Part 12 - Special classes of merchandise) and be modified to bring it into conformity with applicable federal motor vehicle emission standards (40 CFR Part 86 - Control of air pollution from new motor vehicle engines: Certification and test procedures).

C. Nonconforming vehicles may be granted an exemption from the emissions inspection requirement upon (i) submittal and subsequent verification, at the department's discretion, of nonconformity documentation, or (ii) department observation of the vehicle which verifies its status as a nonconforming vehicle.

9 VAC 5-91-130. Relationship of state regulations to federal regulations.

A. In order for the Commonwealth to fulfill its obligations under the federal Clean Air Act, some provisions of this chapter are required to be approved by the U.S. Environmental Protection Agency and when approved those provisions become federally enforceable.

B. In cases where this chapter specifies that procedures or methods shall be approved by, acceptable to or determined by the director or the department or specifically provides for decisions to be made by the director or the department, it may be necessary to have such actions (approvals, determinations, exemptions, exclusions, or decisions) reviewed and confirmed as acceptable or approved by the U.S. Environmental Protection Agency in order to make them federally enforceable. Determination of which state actions require federal confirmation or approval and the administrative mechanism for making associated confirmation or approval decisions shall be made on a case-by-case basis in accordance with U.S. Environmental Protection Agency regulations and policy.

9 VAC 5-91-140. Delegation of authority.

In accordance with the Motor Vehicle Emissions Control Law, the director, or a designee acting for him, may perform any act provided under this chapter.

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9 VAC 5-91-150. Availability of information.

A. Emissions data in the possession of the department shall be available to the public without exception.

B. Any other records, reports or information in the possession of the department shall be available to the public with the following exception:

The department shall consider such records, reports or information, or particular part thereof, confidential in accordance with the Virginia Uniform Trade Secrets Act (§ 59.1-336 et seq. of the Code of Virginia) upon a showing satisfactory to the department by any station owner that such records, reports or information, or particular part thereof, meet the criteria in subsection C of this section and the station owner provides a certification to that effect signed by a responsible person for such owner. Such records, reports or information, or particular part thereof, may be disclosed, however, to other officers, employees or authorized representatives of the Commonwealth of Virginia and the U.S. Environmental Protection Agency concerned with carrying out the provisions of the Motor Vehicle Emissions Control Law and the federal Clean Air Act.

C. In order to be exempt from disclosure to the public under subsection B of this section, the information must satisfy the following criteria:

1. Information for which the station owner has been taking and will continue to take measures to protect confidentiality;
2. Information that has not been and is not presently reasonably obtainable without the consent of the station owner or motor vehicle owner by private citizens or other firms through legitimate means other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding;
3. Information which is not publicly available from sources other than the station owner; and
4. Information the disclosure of which would cause substantial harm to the station owner.

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PART III.
Emission Standards for Motor Vehicle Air Pollution.

9 VAC 5-91-160. Exhaust emission standards for two-speed idle testing in enhanced emissions inspection programs.

A. No motor vehicle subject to the two-speed idle test shall discharge carbon monoxide (CO), or hydrocarbons (HC) in its exhaust emissions in excess of standards set forth in Table III-A when measured with a certified analyzer system and in accordance with the two-speed idle inspection procedures prescribed in Part VI (9 VAC 5-91-410 et seq.).

B. The measured concentration of CO plus CO₂ shall be greater than or equal to 6.0%.

C. The standards in Table III-A may be adjusted by no more than one percentage point for CO and 150 ppm for HC in order to meet the requirements of the Environmental Protection Agency or the federal Clean Air Act.

TABLE III-A.
EXHAUST EMISSION STANDARDS FOR TWO-SPEED
IDLE EMISSIONS TESTS.

Model Year	HC (ppm)	CO (%)
For idle test and 2500 RPM test for vehicles up to 8500 pounds GVWR:		
1996 & later	110	0.75
1990-95	125	1.0
1981-89	220	1.2
1980	220	2.0
1975-79	400	4.0
1970-74	600	6.0
1968-69	800	8.0
For vehicles from 8501 to 10000 pounds GVWR:		
1997 & later	125	0.75
1991-1996	150	1.0
1981-1990	220	1.2
1980	220	2.0
1975-79	400	4.0
1970-74	600	6.0
1968-69	800	8.0

9 VAC 5-91-170. Exhaust emission standards for ASM testing in enhanced emissions inspection programs.

A. No motor vehicle shall discharge carbon monoxide (CO), hydrocarbons (HC), or oxides of nitrogen (NO_x) in its exhaust emissions in excess of standards set forth in tables in Part XIV (9 VAC 5-91-790 et seq.) when measured with a certified analyzer system and in accordance with the ASM inspection procedures prescribed in Part VI (9 VAC 5-91-410 et seq.).

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B. The director may determine, based on results of emissions inspections verified by the department and in consultation with vehicle manufacturers, EPA or appropriate research organizations that emissions standards for specific vehicle models, model years, or weight classifications shall remain at the phase-in level as specified in 9 VAC 5-91-790 or be set at interim standards less stringent than the final standards rather than being adjusted to the final standards specified in 9 VAC 5-91-800.

9 VAC 5-91-180. Exhaust emissions standards for on-road testing through remote sensing.

A. No affected motor vehicle shall exceed the emissions standard for carbon monoxide (CO), hydrocarbons (HC) or nitric oxide (NO) set forth in Table III-B when measured with a remote sensing device and in accordance with the inspection procedures prescribed in Part XII (9 VAC 5-91-740 et seq.).

B. Any affected motor vehicle determined to have exceeded any emissions standards in Table III-B when measured by a remote sensing device in accordance with the procedures of Part XII (9 VAC 5-91-740 et seq.) may be subject to an emissions inspection at an emissions inspection station in accordance with Part XII (9 VAC 5-91-740 et seq.) or a civil charge in accordance with § 46.2-1178.1 B of the Code of Virginia, or both.

C. Beginning January 1, 2005, motor vehicles that exceed the emissions standards in Table III-B two days in any 120 day period shall be considered to have violated the emissions standards. In addition, the department may use the high emitter index as an additional screening requirement.

D. Beginning July 1, 2005, or later date based on analysis of remote sensing failure rates and confirmation test results, the department may determine that an affected vehicle is a high emitter if the vehicle exceeds the standards in Table III-B once and is also determined to have a high emitter index of greater than 75.

E. All remote sensing measurements used to determine if a vehicle exceeds emissions standards prescribed in Table III-B shall be taken at valid sites under conditions at which the vehicle specific power (VSP) indicator is between 3 and 22. Standards for NO shall be corrected for VSP using the following formula:

$$\text{NO standard} = \text{Low Range Standard} + (\text{VSP}-3)/19 \times (\text{High Range Standard} - \text{Low Range Standard}).$$

Where:

Low Range Standard = the smaller values in Table III B in the NO (ppm) Range column;

VSP = vehicle specific power indicator; and

High Range Standard = the larger values in Table III B in the NO (ppm) Range column.

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F. The department may adjust the standards in Table III-B if it is determined that a standard is causing a confirmation test pass rate in excess of 20% or less than 5.0%. Such adjustments may be for specific models within each model year group based on manufacturer's emissions control technology.

TABLE III-B.
EXHAUST EMISSION STANDARDS FOR REMOTE SENSING.

Standards Beginning January 1, 2005			
Period/Model Year/Vehicle Type	CO (%)	HC (ppm)	NO (ppm) Range ¹ Low to High
Pre-1981 – LDGT (1 or 2)	7.0%	1000	
Pre-1981 – LDGV	7.0%	1000	
Pre-1981 – HDGV	7.0%	1000	
1981 TO 1985 – LDGT (1 or 2)	6.0%	800	1500 – 2000
1981 TO 1985 – LDGV	6.0%	750	1200 – 1800
1981 TO 1985 – HDGV	7.0%	750	
1986 TO 1990 – LDGT (1 or 2)	5.5%	700	1200 – 1800
1986 TO 1990 – LDGV	5.5%	650	1000 – 1600
1986 TO 1990 – HDGV	6.5%	750	
1991 TO 1995 – LDGT (1 or 2)	5.0%	650	1200 – 1800
1991 TO 1995 – LDGV	5.0%	600	1000 – 1600
1991 TO 1995 – HDGV	6.0%	700	
1996 and newer LDGT (1 or 2)	4.0%	450	600 – 900
1996 and newer LDGV	4.0%	450	600 – 900
1996 and newer HDGV	5.0%	600	

¹ $NO\ standard = Low\ Range\ standard + (Actual\ VSP-3)/19 * (High\ Range\ standard - Low\ Range\ Standard)$

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Table III-B (Continued)

Standards Beginning July 1, 2005 and later – Two or More On-Road Measurements			
Period/Model Year/Vehicle Type	CO (%)	HC (ppm)	NO (ppm) Range Low to High
Pre-1981 – LDGT (1 or 2)	7.0%	1000	
Pre-1981 – LDGV	7.0%	1000	
Pre-1981 – HDGV	7.0%	1000	
1981 TO 1985 – LDGT (1 or 2)	6.0%	800	1500 – 2000
1981 TO 1985 – LDGV	6.0%	750	1200 – 1800
1981 TO 1985 – HDGV	7.0%	750	
1986 TO 1990 – LDGT (1 or 2)	5.5%	700	1200 – 1800
1986 TO 1990 – LDGV	5.5%	650	1000 – 1600
1986 TO 1990 – HDGV	6.5%	750	
1991 TO 1995 – LDGT (1 or 2)	4.0%	550	1000 – 1500
1991 TO 1995 – LDGV	4.0%	500	900 – 1400
1991 TO 1995 – HDGV	6.0%	700	
1996 and newer LDGT (1 or 2)	3.0%	350	500 – 800
1996 and newer LDGV	3.0%	350	500 – 800
1996 and newer HDGV	5.0%	600	
July 1, 2005 and later – Single On-Road Measurement Vehicle must have High Emitter Index of 75% or Higher			
Period/Model Year/Vehicle Type	CO (%)	HC (ppm)	NO (ppm) Range Low to High
Pre-1981 – LDGT (1 or 2)	7.0%	1000	
Pre-1981 – LDGV	7.0%	1000	
Pre-1981 – HDGV	7.0%	1000	
1981 TO 1985 – LDGT (1 or 2)	6.0%	800	1500 – 2000
1981 TO 1985 – LDGV	6.0%	750	1200 – 1800
1981 TO 1985 – HDGV	7.0%	750	
1986 TO 1990 – LDGT (1 or 2)	5.5%	700	1200 – 1800
1986 TO 1990 – LDGV	5.5%	650	1000 – 1600
1986 TO 1990 – HDGV	6.5%	750	
1991 TO 1995 – LDGT (1 or 2)	4.0%	550	1000 – 1500
1991 TO 1995 – LDGV	4.0%	500	900 – 1400
1991 TO 1995 – HDGV	6.0%	700	
1996 + LDGT (1 or 2)	3.0%	350	500 – 800
1996 + LDGV	3.0%	350	500 – 800
1996 + HDGV	5.0%	600	

G. Beginning July 1, 2005, clean screen vehicles will be identified using on-road testing equipment measurements based on all of the following criteria:

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1. Up to 5.0% of the number of vehicles measured during any 30-day period may be identified as clean screen vehicles. This percentage may be evaluated annually by the department and adjusted based on the amount of emissions reduction lost due to clean screening.

2. Vehicles which have the cleanest measurements based on an average of at least three measurements (taken on three different days in a 120-day time period) may be identified as clean screen vehicles as determined by the percentage of the applicable standards.

3. Vehicles must have no measurements exceeding the standards in Table III B (taken on three different days in a 120-day time period as required in subdivision 2 of this subsection) to be identified as clean screen vehicles.

4. Vehicles must not be equipped with an OBD system unless DEQ makes a determination to include certain OBD model years based on evidence that there would not be a significant loss in emissions reduction benefits.

H. At the discretion of the director, vehicles identified as clean screen vehicles in accordance with subsection G of this section may be recorded as having passed the next emissions inspection required by § 46.2-1183 of the Code of Virginia and the result shall be entered into the emissions inspection record for that vehicle.

9 VAC 5-91-190. Emissions control systems standards.

A. In accordance with § 46.2-1048 of the Code of Virginia no owner or other person shall cause or permit the removal, disconnection, disabling or intentional alteration which reduces the effectiveness of an emissions control system or device that has been installed on a motor vehicle in accordance with federal laws and regulations.

B. No owner or other person shall attempt to defeat the purpose of any such motor vehicle emissions control system or device by installing any part or component which is not (i) a standard factory replacement part or component of the device or (ii) a part or component certified by the U.S. Environmental Protection Agency to comply with the Federal Motor Vehicle Control Program requirements.

C. The installation of any aftermarket parts approved by the U.S. Environmental Protection Agency or by the California Air Resources Board for installation as a part of a vehicle's emissions control equipment shall not be considered a violation of this section.

D. No owner or other person shall operate a motor vehicle or engine with the motor vehicle emissions control system or device removed, rendered inoperable or effectiveness reduced through intentional alteration.

E. The provisions of this section shall not prohibit or prevent shop adjustments or replacement, or both, of equipment for maintenance or repair, or the conversion of engines to low polluting fuels such as, but not limited to, natural gas or propane.

9 VAC 5-91-200. Evaporative emissions systems standards.

A. Standards for evaporative emissions inspections shall be those described in 9 VAC 5-91-450 for applicable motor vehicles.

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B. Evaporative system fuel filler cap (gas cap) standards shall apply beginning January 5, 1998.

C. Evaporative system pressure testing standards shall apply provided such testing is mandated by the EPA for appropriate Implementation Plan credits. Such testing shall only be conducted at emissions inspection stations upon installation of approved equipment and software necessary for performing the test, as determined by the director.

9 VAC 5-91-210. Visible emissions standards.

A. No owner or other person shall cause or permit the emission of visible air pollutants from gasoline and other non-diesel fuels -powered motor vehicles for longer than five consecutive seconds after the engine has been brought up to operating temperature.

B. No owner or other person shall cause or permit the emission of visible air pollutants from diesel-powered motor vehicles of a density equal to or greater than 20% opacity for longer than 10 consecutive seconds after the engine has been brought up to operating temperature.

C. Compliance with opacity standards in this part shall be determined by conducting observations in accordance with Reference Method 9 or any alternative method. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity standards.

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PART IV.
Permitting and Operation of Emissions Inspection Stations.

9 VAC 5-91-220. General provisions.

A. The director shall issue, suspend, revoke or deny permits and establish procedures and other instructions for the operation of emissions inspection stations.

B. An emissions inspection station permit is valid only for the facility and owner identified on the permit and is not transferable to any other owner or facility. No facility shall be represented as an emissions inspection station unless the owner holds a valid permit issued by the director.

C. Transfer or sale of business, or changes in partnership, name or location shall require notification to the department and shall require a new permit. The emissions inspection station permit holder shall inform the department of any transfer or sale of the business or change in the name of the station, ownership, partnership, or name of lessee or operator within 10 days of such change.

D. All documents, permits, data media and other inspection related materials shall revert to the ownership of the department if the emissions inspection station is abandoned or if the emissions inspection business is discontinued by the permit holder.

E. Emissions inspection stations shall inspect all subject vehicles, which they are required by permit to inspect, in a timely manner and without prior repair or adjustment except to remedy conditions for which the vehicle is rejected from testing under the provisions of 9 VAC 5-91-420 C.

F. All emissions inspections, including retests, except for aborted tests, shall be conducted in their entirety according to the emission standards and test components contained in Parts III (9 VAC 5-91-160 et seq.), VI (9 VAC 5-91-410 et seq.) and XIV (9 VAC 5-91-790 et seq.) of this chapter.

9 VAC 5-91-230. Applications.

A. Applications for permits shall be made to, and in accordance with procedures approved by, the department.

B. Applications for permits shall be signed by an officer of the corporation or by a duly authorized agent of the corporation; or by an equivalently responsible officer in the case of organizations other than corporations; or in other cases, by the owner; or in the case of governmental entities, by the highest executive official of such entities or his designee. A person is a duly authorized agent only if the authorization is made in writing by an officer of the corporation or by an equivalently responsible officer in the case of organizations other than corporations. Such signature shall constitute personal affirmation that the statements made in the application are true and complete to the best of the knowledge and belief of the signer.

C. An application for permit shall identify the facility for which application is made to become an emissions inspection station. A separate application is required for each facility and each facility requires a separate permit.

1. More than one inspection lane may be included in a single permit but, in such case, any enforcement action taken in regard to that permit shall apply to all lanes contained in the permit.

2. In the case of mobile fleet emissions inspection station permits, the application shall identify the fleet that will be tested as well as the planned dates and times of operations.

D. Applications for permits shall include such information as may be required by the department to determine compliance with applicable requirements of this chapter. The information required shall include, but is not limited to, the following:

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1. The name of the applicant.
 2. The street and mailing address of the facility or the permittee, or both, as determined by the department, and number of inspection lanes planned.
 3. Demonstration that the analyzer system used by each facility for which a permit is requested complies with the provisions of Part X (9 VAC 5-91-640 et seq.).
 4. Proof of business ownership, articles of incorporation, partnership agreements, and lease agreements and proof of conformity with local zoning, use, or business licensing laws, ordinances or regulations.
- E. The applicant shall provide any other information that the department deems necessary to determine conformity with this chapter.
- F. The applicant shall provide any subsequent changes to the information required under this section within 30 days of such change.
- G. Application for a permit to test fleet vehicles using mobile testing equipment shall be made at least 30 days prior the commencement of any testing and must be signed by appropriate responsible persons of each party.

9 VAC 5-91-240. Standards and conditions for permits.

- A. No permit for an emissions inspection station or fleet emissions inspection station shall be issued unless the director determines that:
1. The station owner has obtained and properly installed an analyzer system certified by the department, tools and electronic data processing and other equipment to adequately conduct the required emissions inspection in the manner prescribed by this chapter;
 2. The station owner has employed properly trained and licensed personnel to perform the necessary emissions inspections;
 3. For mobile fleet emissions inspection stations, a fleet emissions inspection permit has been issued for the fleet that will be tested; and
 4. The station owner has complied with all other requirements of this chapter which pertain to emissions inspection stations.
- B. No permit shall be issued to a facility which has a permit currently under suspension by the director until such suspension period has elapsed.
- C. No permit shall be issued pursuant to this section unless it is shown to the satisfaction of the director that the emissions inspection station shall operate without causing a violation of the applicable provisions of this chapter and the Virginia Motor Vehicle Emissions Control Law.
- D. Any permit applicant whose permit has been revoked shall make a showing to the director that the condition causing the revocation has been corrected to the satisfaction of the director and in accordance with 9 VAC 5-91-610.
- E. Permits issued under this section shall contain, but not be limited to, the following elements:
1. The street address of the facility or the permittee, or both;
 2. The name of the permittee or permittees;

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3. The expiration date of the permit; and
4. Other requirements as may be necessary to ensure compliance with this chapter.

9 VAC 5-91-250. Action on permit application.

A. After receipt of an application or any additional information, the department shall advise the applicant of any deficiency in such application or information.

B. Processing time for a permit is normally 90 days following receipt of a complete application. The department may extend this time period if additional information is required. Processing steps may include, but not be limited to:

1. Completion of a preliminary review and a preliminary decision of the director;
2. Inspection or audit of the facility; and
3. Completion of the final review and the final decision of the director.

C. The director normally will take action on all applications after completion of the review, unless more information is needed. The director shall issue the permit or notify the applicant in writing of the decision, with the reasons, not to issue the permit.

9 VAC 5-91-260. Emissions inspection station permits, categories.

A. A permit shall be issued to a qualified applicant in the following categories, as determined by the department.

1. Emissions inspection station.
2. Fleet emissions inspection station meeting the requirements of 9 VAC 5-91-370.
3. Sensitive mission vehicle emissions fleet inspection station.

B. In accordance with § 46.2-1180 A 5 of the Code of Virginia, the director may issue special permits for the operation of emissions inspections facilities in geographic areas which have been determined by the department, based on the number of available emissions inspection facilities or lanes relative to vehicle population density, to be inadequately covered. Such stations may have special permit conditions which restrict their operational hours, geographic location, data connection, quality control or other processes in order to effectively address the need and the intent of the Virginia Motor Vehicle Emissions Control Law.

C. A permit shall be valid only for the emissions inspection station and operator, owner or lessee to which it is issued and shall not be valid for any other emissions inspection station nor any other operator, owner or lessee.

D. A permit shall be valid for time periods determined by the department, not to exceed three years from the end of the month in which the permit or permit renewal was issued.

E. Upon expiration of the permit, the emissions inspection station shall no longer be authorized to perform inspections.

F. A permit shall expire whenever the owner voluntarily discontinues the operation of an emissions inspection station. Remaining emissions inspection materials shall be returned to the department immediately.

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G. A permit shall expire and documents or data media related to emissions inspections, reinspections, waivers and audits shall become the property of the department when the owner of record abandons the place of business and cannot be located.

9 VAC 5-91-270. Permit renewals.

A. Renewals of permits shall be subject to the same provisions of this chapter as are original permits.

B. It is the responsibility of the emissions inspection station to have a current valid permit. The department will endeavor to notify emissions inspection stations prior to the expiration of their permit.

C. When supported by justification which the department deems adequate, the director may, upon request by a station owner, extend the expiration date of a permit by a period not to exceed three months beyond the original expiration date for the purpose of allowing sufficient time for a station owner to correct such deficiencies in the application as have been identified by the department and to allow completion of the application review by the department.

D. It is the responsibility of the emissions inspection station to notify the department of the expiration of a suspension period.

9 VAC 5-91-280. Permit revocation, surrender of materials.

Upon notice of revocation, emissions inspection stations shall surrender to the department all permits, forms, data media and documents issued by or purchased from the department.

9 VAC 5-91-290. Emissions inspection station operations.

A. Emissions inspection station operations shall be conducted in accordance with applicable statutes and this chapter.

B. Emissions inspection stations shall cooperate with the department during the conduct of audits, investigations and complaint resolutions.

C. Emissions inspection stations, except fleet emissions inspection stations permitted under 9 VAC 5-91-370, shall conduct emissions inspections during normal business hours and shall inspect every vehicle presented for inspection within a reasonable time period.

D. Emissions inspection stations that have performed a chargeable initial inspection that resulted in a test failure or failed invalid result shall provide one free reinspection on the same vehicle upon request within 14 calendar days of the initial inspection test failure or failed invalid result.

E. Emissions inspection stations finding it necessary to suspend inspections due to analyzer system malfunction or any other reason shall refund any inspection fee collected when a station cannot accommodate a customer's request for a free reinspection in accordance with subsection D of this section and 9 VAC 5-91-420 M.

F. Emissions inspection stations shall notify the department when they are unable to perform emission inspections for any reason and shall notify the department when they are able to resume inspections.

G. Emissions inspection stations shall:

1. Employ at least one emissions inspector.

2. Have an emissions inspector on duty during posted emissions inspection hours, except for fleet emissions inspection stations permitted under 9 VAC 5-91-370.

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3. Only allow licensed emissions inspectors to conduct inspections.

H. Emissions inspection stations shall provide to emissions inspection customers any information which has been provided to the emissions inspection station by the department and which is intended to be provided to the customer.

I. Emissions inspection stations shall allow emissions inspection customers to have viewing access to the inspection process.

9 VAC 5-91-300. Emissions inspection station records.

A. Emissions inspection stations shall have records available at the station for inspection by the department any time during normal business hours.

B. Test, waiver, and repair records, as appropriate, shall be maintained by the permittee for 12 months or until transferred to the department.

C. Certificates of vehicle emissions inspection and motor vehicle inspection reports shall be issued only by emissions inspection stations holding valid permits issued by the department.

D. Documents and data pertaining to emissions inspections and waivers shall be kept in a secure location and only be available to emissions inspectors or authorized personnel, as approved by the department.

E. Missing or stolen emissions inspection data or other official documents shall be reported to the department within 24 hours.

F. Emissions inspection stations shall be accountable for all documents and media issued to them by the department. Emissions inspection stations shall be subject to quality assurance and control procedures as defined in 40 CFR 51.363.

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G. Emissions inspection stations shall maintain a file of the name, address, and inspector identification number of all currently employed emissions inspectors authorized by the permittee to perform emissions inspections at that emissions inspection station and shall notify the department of any changes within 10 days of such changes. The emissions inspection station shall provide the file to the department upon request.

9 VAC 5-91-310. Sign and permit posting.

A. Emissions inspection stations shall post a sign, approved or provided by the department, which conforms to local ordinances or codes, designating the location as a Virginia Motor Vehicle Emissions Control Program Inspection Station in a conspicuous location on the permitted premises, within view of the public.

B. Emissions inspection station permits shall be posted in a frame, in a conspicuous place on the permitted premises, within view of the public and approved by the department.

C. Emissions inspection stations shall post the following in a conspicuous location on the permitted premises, within view of the public, and in a manner approved by the department:

1. The fees charged for emissions inspections; and
- 2 The hours of operation for emissions inspections.

D. Emissions inspection stations shall post all signs required by this chapter in a location approved by the department and in a manner that does not violate local sign ordinances or codes.

E. Fleet emissions inspection stations and mobile fleet emissions inspection stations permitted under 9 VAC 5-91-370 shall be exempt from the sign posting requirements in subsections A and C of this section.

9 VAC 5-91-320. Equipment and facility requirements.

A. Emissions inspection stations shall have adequate facilities and equipment, including all current reference and application guides, as specified in subsection D of this section to perform all elements of the emissions inspection.

B. Emissions inspection stations shall be equipped in accordance with this chapter and applicable statutes.

C. Emissions inspection stations which no longer meet the requirements of this part shall cease inspection operations and may be subject to enforcement actions in accordance with Part IX (9 VAC 5-91-590 et seq.).

D. Emissions inspection stations shall be equipped with the following equipment, tools and reference materials at all times. Fleet and mobile fleet emissions inspection stations shall be so equipped during inspection periods reported to the department.

1. A certified analyzer system in accordance with Part X (9 VAC 5-91-640 et seq.) capable of conducting OBD testing as specified in 9 VAC 5-91-420 G 3.
2. Span gases approved by the department and equipment for performing gas span checks.
3. Hand tools and equipment for the proper performance of all inspections as approved by the department.
4. A current emissions control systems application guide which contains a quick reference for emissions control systems and their uses on specific make, model, and model year vehicles. This may be in an electronic form.

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5. Analyzer manufacturer's maintenance and calibration manual.

6. Certified thermometer.

7. Suitable non-reactive exhaust hoses or a ventilation system which conforms to The BOCA National Mechanical Code/1993 (see 9 VAC 5-91-50) for automotive service stations and for facilities in which vehicle engines are operated in excess of 10 continuous seconds and which conforms to the applicable local building or safety code, zoning ordinance, or Occupational Safety and Health Administration requirement.

a. The ventilation system shall discharge the vehicle exhaust outside the building.

b. The flow of the exhaust collection system shall not cause dilution of the exhaust at the sample point in the probe.

8. A cooling fan, used to ventilate the engine compartment, which is capable of generating at least 3,000 standard cubic feet per minute of air flow directed at the vehicle's cooling system at a distance of 12 inches.

9. This regulation (9 VAC 5-91-10 et seq.).

10. Telephone.

11. Dedicated phone line for use by the analyzer system in emissions inspection stations except fleet emissions inspection stations which have been authorized by the director to use a nondedicated phone line pursuant to an agreement between the director and the fleet emissions inspection station, based on vehicle maintenance or registration cycles.

12. Department approved paper for use in the analyzer system printer.

13. Reference material suitable for making a determination, as applicable, of the proper exhaust emissions test type to be administered. This may be in electronic form.

E. Emissions inspection stations shall maintain equipment, tools, and reference materials in proper working order and available at the emissions inspection station at all times.

F. It is the responsibility of the permit holder to maintain a safe and healthy working environment for the conduct of emissions inspections.

9 VAC 5-91-330. Analyzer system operation.

A. Emissions inspection stations shall maintain the analyzer in such a manner that will permit the proper operation in accordance with the requirements of the manufacturer, this chapter, applicable statutes and any procedures developed by the department.

B. The analyzer shall be gas spanned and leak checked according to 40 CFR Part 51, Appendix A to Subpart S or other procedure as approved by the department.

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C. No additions or modifications shall be made to the analyzer unless approved by the analyzer manufacturer and the department.

1. All repairs to the analyzer system must be performed by an authorized manufacturer representative according to 9 VAC 5-91-670 B and C.

2. No analyzer replacement parts shall be used that are not original equipment replacement, or equivalent, as approved by the department.

D. No person shall tamper with or circumvent any system or function of the analyzer.

E. Emissions inspection stations shall be responsible for preventing any tampering with or unauthorized use of the analyzer or its functions.

F. Analyzer lockout conditions shall be removed only by authorized service or department personnel.

G. The analyzer system shall be capable of electronically transmitting to and receiving data from the department computer network related to the administration of the Virginia Vehicle Emissions Control Program.

9 VAC 5-91-340. Motor vehicle inspection report; certificate of emissions inspection.

A. Emission inspection stations and emissions inspectors shall be responsible for ensuring that all motor vehicle inspection reports are legible, and properly completed and printed with correct information appearing in the correct location on the form and shall notify immediately the department and the vehicle operator of any incorrect information appearing on the form.

B. Emissions inspectors and emissions inspection stations shall be responsible for ensuring that all emissions inspection results are properly communicated to the department and to the vehicle operator. The use of the motor vehicle inspection report may serve as proper communication to the vehicle operator.

C. Certificates of vehicle emissions inspection shall be used only for documentation of official test results.

D. Certificates of emission inspections and motor vehicle inspection reports shall be issued only by licensed emissions inspectors employed by permitted emissions inspection stations.

9 VAC 5-91-350. Data media.

Data media used for the collection of official test data shall become property of the department.

9 VAC 5-91-360. Inspector identification number and access code usage.

A. The department shall assign each emissions inspector a unique number and numerical code known as an inspector identification number and an access code to gain access to the analyzer at the inspector's place of employment.

B. Access codes and identification numbers shall be added and deleted only by department personnel.

C. An inspector identification number and access code shall be used only by the inspector to whom it was assigned.

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D. An inspector's name printed on a motor vehicle inspection report shall be an endorsement that the entire test was performed by the inspector whose name appears on the vehicle inspection report. Each inspector must sign his full name on the vehicle inspection report for each emission inspection conducted.

E. Emissions inspection stations and emissions inspectors shall report any unauthorized use of an inspector identification number or access code to the department within 24 hours of the discovery of unauthorized use.

F. Emissions inspection stations and inspectors shall be responsible for any violation or fraudulent inspection which occurs using inspector identification numbers or access codes.

G. Emissions inspection stations shall be responsible for all certificates of vehicle emissions inspection and motor vehicle inspection reports issued by that emissions inspection station.

9 VAC 5-91-370. Fleet emissions inspection stations; mobile fleet emissions inspection stations.

A. The owner of a fleet may be issued a permit as a fleet emissions inspection station and may conduct inspections of that fleet or contract to have such inspections conducted. As a fleet inspection station, inspections shall be conducted only on vehicles commonly owned, operated, leased, or rented by that person or political subdivision and not for employees or the general public. A fleet emissions inspection station owner shall comply with all applicable requirements for emissions inspection stations except those from which they are specifically exempted by this chapter or by special terms or conditions of a special permit issued according to 9 VAC 5-91-260 A 3.

B. Fleet emissions inspection station owners may, upon application and granted permit, have fleet vehicles inspected through the use of mobile emissions inspection stations which have obtained a permit from the director to conduct inspections of that fleet.

C. Fleet emissions inspection station owners using mobile fleet emissions inspections equipment shall notify the department of the planned dates, times and location of intended inspections not later than two weeks prior to testing and, upon request by the department, shall provide a list of vehicles to be inspected.

D. Each fleet emissions inspection station owner is responsible for all vehicle emissions inspection records and data for vehicles inspected in that facility.

E. Fleet owners and fleet emissions inspection station owners shall provide a list that includes vehicle compliance status, updated annually, of affected motor vehicles.

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PART V.
Emissions Inspector Testing and Licensing.

9 VAC 5-91-380. Emissions inspector licenses and renewals.

A. The director shall issue, suspend, revoke or deny licenses, and establish procedures and other instructions for emissions inspectors.

B. Applicants shall qualify under 9 VAC 5-91-390 and shall demonstrate to the department proof of identification and the ability to properly conduct vehicle emissions inspections according to this chapter prior to being issued an emissions inspector license.

C. Application for licenses shall be made to, and in accordance with procedures approved by, the department.

D. Licenses shall be valid for time periods determined by the department, not to exceed three years from the end of the month in which issued.

1. Upon expiration of the license, the emissions inspector shall no longer be authorized to perform emissions inspections.

2. Upon expiration of the license, the applicant shall be required to pass the testing requirements in 9 VAC 5-91-390 before being relicensed.

E. When supported by justification which the department deems adequate, the director may, upon written request by an emissions inspector, extend the expiration date of a license by a period not to exceed three months beyond the original expiration date for the purpose of allowing sufficient time for an inspector to correct such deficiencies in the application, such as completion of the required instruction, as have been identified by the department and to allow completion of the application review by the department. Such application for license extension may require demonstration of the applicant's ability to perform an emissions inspection at an emissions inspection or referee facility to the satisfaction of the department.

F. No person shall represent themselves as an emissions inspector without holding a valid emissions inspector license issued by the director and a valid motor vehicle driver's or operator's license.

1. All required licenses shall be made available to department personnel upon request.

2. It is the responsibility of the emissions inspector to have both a current valid emissions inspector and a valid motor vehicle driver's or operator's license. The department will endeavor to notify inspectors prior to the expiration of their emissions inspector license.

3. Licenses shall be valid only for the person to whom they are issued.

4. Emissions inspector identification numbers and access codes are valid only for the person to whom they are issued. Emissions inspectors shall not provide access codes to anyone except department personnel upon request.

G. Upon notification of revocation, the inspector shall surrender to the department all licenses issued by the director. It is the responsibility of the emissions inspector to notify the department of the termination of a suspension period.

H. Emissions inspectors shall keep their current mailing address and place of employment on file with the department and must notify the department of any changes in employment or mailing address.

I. Emissions inspectors may perform emissions inspections at more than one permitted emission inspection station after notification to the department and with the authorization of the emissions inspection station owners.

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J. The provisions of this part apply to current license holders and applicants for initial, renewal or reinstatement of licenses.

K. Requalification may be required at any time by the department based on the results of monitoring of the performance of the emissions inspector or based on changes in applicable vehicle emissions control or inspection technology. Inspectors may be required to complete instruction or testing to satisfy any deficiencies identified by the department and, if necessary, require demonstration of the inspector's ability to perform an emissions inspection at an emissions inspection station or referee facility. Failure to requalify within three months of notification shall result in expiration of the emissions inspector's licenses.

9 VAC 5-91-390. Qualification requirements for emissions inspector licenses.

A. Applications to qualify for emissions inspector licenses shall be filed with the department and the issuance of the licenses shall be administered by the department. Applications for such licenses shall be completed on forms provided by the department. Before an applicant may be given a license, he must comply with the requirements of this section. The department will notify applicants of the evaluation requirements prior to testing.

B. An applicant shall demonstrate the ability to operate the certified analyzer systems properly and perform testing as required by this chapter.

C. No emissions inspector license shall be issued unless it is shown to the satisfaction of the director that the emissions inspector has the ability and resources to perform emissions inspections without causing a violation of the applicable provisions of this chapter and the Virginia Motor Vehicle Emissions Control Law.

D. Any applicant whose license has been revoked shall make a showing to the director that the condition causing the revocation has been corrected to the satisfaction of the director.

E. An applicant shall bear a valid motor vehicle driver's or operator's license and shall present proof of such license to the department at the time of application.

F. An applicant shall demonstrate knowledge, skill, and competence concerning the conduct of emissions inspections. Such knowledge, skill and competence shall be demonstrated by completing training courses approved by the department and by passing a qualification test (scoring 80% or higher) which may include, but not be limited to, knowledge of the following;

1. Operation and purpose of emissions control systems.
2. General relationship of hydrocarbon, oxides of nitrogen (NO_x), and carbon monoxide emissions to timing and air-to-fuel ratio control.
3. General information regarding adjustment and repair based on manufacturers' specifications.
4. This regulation (9 VAC 5-91-10 et seq.).
5. General information regarding contemporary diagnostic and engine tune-up procedures.
6. The provisions of the Emissions Control Systems Performance Warranty pursuant to § 207(b) of the federal Clean Air Act as it applies to this chapter.
7. Visual inspection of the required emissions control equipment for 1973 and newer vehicles.
8. Operation of and proper use, care, maintenance, and gas span checking of certified

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analyzer systems.

9. Proper use of and distribution of motor vehicle inspection reports, certificates of emissions inspection, and supplemental documents.

10. Inspections for visible smoke emissions.

11. Functional testing of the evaporative emissions control system as required in the enhanced emissions inspection program.

12. Safety and public health as it applies to the Virginia Vehicle Emissions Control Program.

13. Public relations as it applies to the Virginia Vehicle Emissions Control Program.

9 VAC 5-91-400. Conduct of emissions inspectors.

Emissions inspectors shall be truthful and cooperate with the department during the conduct of audits, investigations and complaint resolution and all official matters.

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PART VI.
Inspection Procedures.

9 VAC 5-91-410. General.

A. The key steps in the emissions inspection procedure are as follows:

1. Preliminary inspection of the vehicle to determine whether to accept the vehicle for testing or reject it, as approved by the department and according to 9 VAC 5-91-420 C. If the vehicle is rejected, the results of such preliminary inspection shall be provided to the customer.
2. Advise the customer of the ability of the emissions inspection station to perform emissions related repairs including the availability of certified emissions repair technicians and necessary equipment. If the vehicle failed the test, inform the customer of their right to seek repairs elsewhere.
3. An agreement between the customer and the emissions inspection station, oral or written, that an emissions inspection will be performed and the requisite fee paid.
4. Determination of the type of emissions test required, ASM or two-speed idle test, or OBD system test for OBD vehicles. For certain OBD vehicles, the director may require an exhaust test (ASM or two-speed idle) in addition to the OBD system test if he conducts appropriate studies and determines that (i) the expected failure rate for exhaust testing for these certain vehicles would be greater than 5%, (ii) additional emission reductions would be achieved, and (iii) the EPA acknowledges such emission reduction benefits.
5. The inspection of emissions control equipment and an evaluation for the presence of visible smoke.
6. The test of exhaust emissions levels, or the vehicle's on-board diagnostic system if applicable, using a certified analyzer system.
7. The evaporative system pressure test, if applicable, and fuel filler cap pressure test as applicable according to the procedure determined automatically by the analyzer system.
8. The distribution of documents and emissions inspection results. The emissions inspector shall sign each motor vehicle emissions inspection report for each emissions inspection performed by that inspector. The inspector's identification number or the inspector's signature, or both, shall be an endorsement that all aspects of the emissions inspection were performed by the inspector in accordance with this chapter.
9. Advise customers of emissions inspection results, options for waiver if applicable, and the obligation of the station to perform a free retest within 14 days for failed vehicles and the conditions placed on the motorist in regard to free retests.
10. Conduct free retest, if necessary, within 14 days of a chargeable initial test.

B. The emissions inspection station may charge a fee not to exceed the amount specified in § 46.2-1182 of the Code of Virginia.

9 VAC 5-91-420. Inspection procedure: rejection, pass, fail, waiver.

A. All aspects of the inspection shall be performed by an emissions inspector, using the instructions programmed in the certified analyzer system and procedures approved by the department, within the designated inspection area, and on the permitted premises.

B. The emissions inspection station shall notify the customer prior to initiating an emissions inspection that the emissions inspection station is either able or unable to perform the emission related

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repairs required by 9 VAC 5-91-480 for that particular vehicle should that vehicle fail the inspection. The emissions inspector shall not conduct an inspection on a motor vehicle unless the customer gives approval after being so notified.

C. The emissions inspector shall not conduct an inspection on a motor vehicle if the vehicle is in an unsafe condition for testing according to the following conditions. The customer shall be informed of any such condition.

1. The vehicle shall not have holes or detectable leaks in the exhaust system. The inspector may check the system for leaks by listening or visually inspecting for such leaks or by measuring carbon dioxide. The presence of leaks shall cause the vehicle to be rejected from testing.

2. The motor vehicle shall be evaluated for the presence of visible smoke emissions. Those vehicles exhibiting any visible smoke emissions from the engine crankcase or exhaust system or both, shall be rejected from testing.

3. The vehicle shall not have any mechanical problems, such as engine, brake, or transmission problems or engine, radiator, or transmission fluid leaks which would create a safety hazard for the applicable test, or bias test results. Such conditions shall cause the vehicle to be rejected from testing.

4. For vehicles receiving a test while operating on a dynamometer, the vehicle shall be rejected from testing if drive wheel tire tread wear indicators, tire cords, bubbles, cuts, or other damage are visible. Such vehicles shall be rejected from testing if space-saver spare tires are being used on a drive axle or if they do not have reasonably sized tires on the drive axle or axles based on dynamometer manufacturer safety criteria or if the set of tires is a mixture of radial and bias ply. Vehicles may be rejected if they have different sized tires on the drive axle or axles. Drive wheel tires shall be checked for appropriate tire pressure and adjusted as necessary as recommended by the tire or vehicle manufacturer.

5. The vehicle shall be rejected from testing if the fuel filler cap (gas cap) is missing or cannot be removed.

6. The vehicle shall be rejected from testing if a known, emissions-related, manufacturers recall has not been satisfied according to Part XI (9 VAC 5-91-720 et seq.).

7. Vehicles that are overheated shall be rejected from testing. Vehicles which indicate that an overheated condition will be achieved during testing may be rejected from testing at the discretion of the inspector.

8. Provided the OBD provisions of subsection G 3 b of this section are being implemented, OBD vehicles shall be rejected from testing for any of the following:

a. The OBD data link cannot be accessed physically or electronically.

b. The testing equipment indicates that the OBD system is in a "not ready" status. A "not ready" status shall be indicated by the following:

(1) For model year 1996 through 2000, three or more monitors indicate "not ready."

(2) For model year 2001 and newer, two or more monitors indicate "not ready."

c. The director, based on information discovered in this or other state programs or received from motor vehicle manufacturers or the EPA, may determine that a "not ready" status is indicated by more than the minimum number or monitors that indicate "not ready" as set forth in subdivision 8 b of this subsection.

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D. The emissions inspection procedure shall be performed under the following conditions:

1. For vehicles subject to exhaust emissions testing, the entire vehicle shall be in normal operating condition as indicated by a temperature gauge or touch test on the radiator hose. If ASM testing is performed, a cooling fan shall be directed at the engine cooling system if the ambient temperature exceeds 72°F.

2. The inspection shall be performed with the transmission in park or neutral for two-speed idle testing, or in drive (if automatic), or the appropriate gear to achieve necessary RPM range (if manual) for ASM testing; and with all accessories off.

3. All electronic and mechanical testing equipment shall be properly attached according to vehicle and analyzer manufacturer requirements and instructions.

4. For the purpose of conducting the evaporative system pressure test, or gas cap pressure test, or both, the vehicle may be turned off unless the vehicle manufacturer has instructed otherwise.

5. For vehicles subject to exhaust emissions testing, the analyzer probe shall be properly inserted into the exhaust system.

a. The analyzer probe shall be inserted into the tailpipe as recommended by the analyzer manufacturer for a quality sample, or at least 10 inches if not specified by the manufacturer.

b. If a baffle or screen prevents probe insertion to an adequate depth, a suitable probe adapter or extension boot which effectively lengthens the tail pipe must be used.

c. If the vehicle is equipped with multiple unique exhaust outlets, a suitable analyzer manufacturer recommended adapter or other apparatus shall be used in order to provide a single supply of the sample exhaust to the analyzer.

d. Vehicle exhaust shall be vented safely out of the inspection area and facility.

6. If the vehicle stops running or the engine stalls during the test it shall be started as soon as possible and, for vehicles subject to exhaust emissions testing, shall be running for at least 30 seconds prior to the restart of the test.

7. For vehicles subject to exhaust emissions testing, the exhaust test shall be terminated upon reaching the overall maximum test time for the applicable test, or if CO plus CO₂ concentration falls below 6.0% as determined by the analyzer system.

8. Each emissions inspection, whether initial or retest, shall be conducted in its entirety with the exception of: (i) conditions which require that the vehicle be rejected from testing in accordance with 9 VAC 5-91-420 C, (ii) invalid test conditions, or (iii) conditions beyond the emissions inspector's control which cause the test to be aborted.

E. In consideration of maintaining inspection integrity:

1. The temperature of the inspection area shall be between 41°F and 110°F during the inspection. Inspection area temperatures shall be accurately measured in a well-ventilated location away from vehicle engine and exhaust heat sources and out of direct sunlight. The analyzer shall not be operated when the temperature of the inspection area is not within the range stated above.

2. The analyzer system shall be kept in a stable environment which affords adequate protection from the weather and local sources of hydrocarbons or other pollutants that may interfere with analyzer performance or accuracy of test results, or both.

3. The electrical supply to the analyzer system shall be able to meet the manufacturer's

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requirements for voltage and frequency stability.

4. The inspection location shall meet all applicable zoning requirements.

5. The analyzer system shall be operated according to quality assurance procedures and other procedures approved by the department.

F. The emissions inspector shall accurately identify and enter vehicle information, visual component and visible smoke inspection results as applicable for vehicle emissions inspection records. The data entered into the certified analyzer system and recorded on the certificate of vehicle emissions inspection shall be the data from the vehicle being inspected and must be obtained from that vehicle.

G. The emissions inspector shall perform an inspection of the emissions control systems. The inspection shall include the following:

1. An examination of the emissions control information decal (sticker) under the hood, reference manual, and applications guide to determine if the vehicle, as manufactured or certified for sale or use within the United States, should be equipped with a catalytic converter system, air injection system, fuel evaporative emissions control system, positive crankcase ventilation system, exhaust gas recirculation valve, on-board diagnostic system, or thermostatic air cleaner system, as appropriate.

2. Based on the determinations made in 9 VAC 5-91-420 G 1, a visual inspection for the presence and the operability of the catalytic converter system and, for vehicles subject to exhaust emissions testing, the air injection system, fuel evaporative emissions control system, positive crankcase ventilation system, exhaust gas recirculation system and thermostatic air cleaner system. If any of these parts or systems are inoperable, or have been removed or damaged, or rendered inoperable, the vehicle will not qualify for an emissions inspection approval or waiver. If systems are missing which the reference manual or applications guide indicates should be present, the motor vehicle manufacturer's emissions control information provided for that vehicle shall apply. The inspector shall enter the result of the visual inspection, "pass," "fail," or "not applicable" as appropriate into the certified analyzer system.

The department may issue a temporary waiver because of the unavailability of component parts listed in subdivision 2 of this subsection if it is determined that the subject components or parts are not available provided the following conditions have been met:

a. The owner of the vehicle obtains a signed statement from the manufacturer's dealer or automotive parts source which supplies parts for the vehicle model indicating the non-availability of such parts.

b. The statement submitted must be on letterhead or other official form or document and signed by an officer, owner or other responsible official of the automotive parts source.

c. The statement must identify the parts by description and part number and must indicate whether the parts are not currently stocked, have been superseded by other parts, or are out of production.

d. The department may conduct an independent investigation to locate any such parts or to verify the information on the statement prior to the issuance of any vehicle inspection report. The vehicle shall be held to all applicable inspection parameters, test type and standards or other conditions with the exception of the emissions control components and parts which have been verified as unavailable.

e. Any additional requirements to repair the vehicle to meet the applicable emissions standards or to qualify for an emissions inspection waiver under 9 VAC 5-91-420 N shall apply.

f. If the department is able to determine that (i) the unavailable part(s) is the only method of controlling the emissions for which the vehicle has failed an emissions inspection or (ii) no other repairs will be effective in reducing such emissions, the department may issue a temporary waiver

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notwithstanding the provisions of 9 VAC 5-91-420 N.

3. For OBD vehicles, an electronic inspection of the applicable on-board diagnostic (OBD) system according to manufacturer specifications and procedures approved by the EPA. The exhaust emissions test may also be performed on a limited basis as specified by the department for quality control or program evaluation purposes.

a. Pending availability and installation of necessary hardware and software, emissions-related results of sensing of OBD systems for OBD vehicles shall be recorded in the inspection record in addition to the exhaust emissions test procedures and reported to the customer. The OBD results shall not cause the vehicle to be rejected from testing or to fail the emissions inspection.

b. Beginning October 1, 2002 or later date as determined by the department pending availability and installation of necessary hardware and software, emissions-related failure codes that cause the malfunction indicator lamp to be commanded "on" provided by OBD systems of OBD vehicles shall cause the vehicle to fail the emissions inspection. If testing equipment or visual inspection indicates that the malfunction indicator lamp is inoperable, the vehicle shall fail the emissions inspection. If the testing equipment indicates that the OBD system is in a "not ready" status the vehicle shall be rejected from testing according to 9 VAC 5-91-420 C 8.

c. Beginning October 1, 2004, emissions related failure codes that cause the malfunction indicator lamp to be commanded "on" as provided by OBD systems of light duty diesel powered vehicles of model years 1997 and newer shall cause the vehicle to fail the inspection. In addition, if the testing equipment or visual examination indicates that the malfunction indicator lamp is inoperable, the vehicle shall fail the emissions inspection. If the testing equipment indicates that the OBD system is in a "not ready" status the vehicle shall be rejected from testing according to 9 VAC 5-91-420 C 8. The director may increase the number of "not ready" monitors allowed based on an analysis of the program data, data from other state's programs and the EPA. If the director finds that the necessary hardware and software necessary to perform this OBD test are not available or installed by October 1, 2004, the effective date shall be October 1, 2006.

d. The department may exempt vehicle models or some classes of vehicles from OBD testing due to known OBD system problems or anomalies associated with such vehicles. If exempted from OBD testing such vehicles shall receive the ASM or TSI test as applicable.

H. For vehicles otherwise subject to ASM testing based on model year and weight classification, the department may determine, due to complications identified in this or other state programs, or consultation with vehicle manufacturers, that certain vehicle makes or models shall be tested using the two-speed idle test in lieu of the ASM test or using a mixture of test modes such as an ASM 2525 coupled with an idle test.

I. For 1981 model year and newer vehicles with a GVWR up to and including 8,500 pounds, the exhaust emissions inspection procedure, if applicable, shall be an ASM, two-mode (ASM 5015 plus ASM 2525), loaded test, performed while the vehicle is operating on the analyzer system dynamometer. The test shall be preceded by a 30-90 second preconditioning period, as determined by the department, using the ASM 2525 load simulation.

J. The exhaust emissions inspection procedure, if applicable, shall be a two-speed idle test as specified in section (II) of Appendix B of 40 CFR Part 51, Subpart S, and 9 VAC 5-91-440 for the following affected motor vehicles:

1. Vehicles with a GVWR greater than 8,500 pounds and up to and including 10,000 pounds,

2. Vehicles of model years 1980 and older,

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3. Vehicles which employ full-time four wheel drive systems,

4. Vehicles which have traction control or anti-lock brake systems which have been determined by the manufacturer or the department to interfere with proper ASM testing; or

5. Vehicles which have some other configuration which has been determined by the department to interfere with proper ASM testing.

K. For vehicles originally factory equipped with an evaporative emissions control system, the vehicle's evaporative emissions control system shall be checked by performing an evaporative system pressure test, if applicable, and a fuel filler cap pressure test as applicable according to the phase-in of testing specified in 9 VAC 5-91-200.

L. In order to obtain a vehicle registration from the Department of Motor Vehicles, a certificate of emissions inspection shall be issued by an emissions inspector or the department indicating that the vehicle has either passed the emissions inspection or has received a waiver as specified below. A motor vehicle shall pass the emissions inspection and a certificate of vehicle emissions inspection and a motor vehicle inspection report indicating the vehicle has passed shall be issued if the following conditions are met:

1. The motor vehicle meets the applicable emissions control systems inspection requirements.

2. For vehicles subject to exhaust emissions testing, the vehicle emissions levels are the same as or less than the applicable exhaust emission standards in Part III (9 VAC 5-91-160 et seq.) and Part XIV (9 VAC 5-91-790 et seq.), as applicable; or for vehicles subject to OBD, the vehicle passes the OBD test and exhaust emissions test, if applicable.

3. There are no visible smoke emissions from the vehicle engine crankcase or tail pipe, or both.

4. The vehicle passes the evaporative system pressure test, if applicable, fuel filler cap pressure test.

M. If the vehicle fails the initial emissions inspection, a certificate of emissions inspection and a motor vehicle inspection report shall be issued indicating a failure, and the owner shall have 14 days in which to have repairs or adjustments made and return the vehicle to the emissions inspection station which performed the initial inspection for one free reinspection.

N. A certificate of vehicle emissions inspection waiver may be issued if all of the following conditions are met:

1. The vehicle passes the emissions control systems inspection described by subsection G of this section if applicable.

2. There are no visible smoke emissions from the vehicle engine crankcase or exhaust system, or both.

3. The vehicle passes the evaporative system pressure test, if applicable, and fuel filler cap pressure test.

4. The vehicle continues to exceed applicable emissions standards after emissions related repairs required by 9 VAC 5-91-480 have been performed.

5. An amount equal to or greater than the adjusted waiver cost for enhanced emissions inspection programs, specified in subsection O of this section, has been spent on emissions related repairs as specified in 9 VAC 5-91-480 provided that:

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a. Proof that emission related repairs have been accomplished and costs for that specific vehicle have been provided to the emissions inspection station in the form of an itemized bill, invoice, paid work order, or statement in which emissions related parts or repairs, or both, are specifically identified, and to the extent practical, the inspector can confirm the repairs by visual examination;

b. The emissions inspector has been provided with a properly completed emissions repair data form indicating that the repair work was performed at a certified emissions repair facility and that the repairs were performed by or under the supervision or approval of a certified emissions repair technician at a certified emissions repair facility, and

c. The repair work was performed no earlier than 60 days prior to the initial inspection.

O. Beginning January 1, 2003, the repair cost requirements for waiver eligibility for the enhanced emissions inspection program shall be \$ 450 adjusted to reflect the increase in the Consumer Price Index (CPI) and adjusted annually thereafter, as described at 40 CFR 51.360(a)(7) and § 46.2-1181 C of the Code of Virginia.

P. A waiver shall not be issued for a vehicle which is eligible for the emissions control systems performance warranty, under the provisions of § 207(b) of the federal Clean Air Act. In accordance with the provisions of § 207(b) of the federal Clean Air Act, the repair costs necessary for compliance with emissions standards specified in Part III (9 VAC 5-91-160 et seq.) and Part XIV (9 VAC 5-91-790 et seq.) will be borne by the vehicle manufacturer or authorized dealer representative.

Q. The analyzer system shall generate an electronic record of the certificate of emissions inspection and transmit the appropriate data to the department and the emissions inspector shall make distribution of the vehicle inspection report to the customer.

R. The customer shall be advised as specified below upon completion or termination of the inspection procedure.

1. If the test is terminated prior to completion, explain the problem with the vehicle or equipment and, if applicable, advise of free retest and time limit.

2. If the vehicle passes or receives a waiver, provide a motor vehicle inspection report and advise motorist of registration requirement and process, including the process to be used in case of interruption of the electronic data transfer system.

3. If the vehicle fails:

a. Give vehicle inspection report of failure to customer;

b. Advise of type of failure;

c. Advise of free retest and time limit;

d. Advise of repair facility information as provided by the department; and

e. Advise of waiver requirements, if applicable.

S. In cases of complaints or disputes between the emissions inspector or emissions inspection station and the customer, the customer shall be advised of the location and phone number of a department representative to be contacted to obtain assistance in resolving disputes.

9 VAC 5-91-430. ASM test procedure.

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A. The ASM equipment shall be in proper operating condition according to the manufacturer's instructions prior to initiating a test.

1. The vehicle shall be maneuvered onto the dynamometer with the drive wheels positioned on the dynamometer rolls. Prior to test initiation, the rolls shall be rotated until the vehicle laterally stabilizes on the dynamometer. Vehicles that cannot be stabilized on the dynamometer shall be rejected from testing. Drive wheel tires shall be dried if necessary to prevent slippage.

2. Prior to initiating the ASM exhaust test procedure:

a. Vehicles that are also required to receive OBD or evaporative emissions testing shall be connected to the appropriate test equipment according to 9 VAC 5-91-450 and vehicle and analyzer manufacturer instructions.

b. The OBD test, evaporative system pressure test, if applicable, and fuel filler cap pressure test, including second chance fuel filler cap pressure test if required, shall be performed prior to the ASM test.

3. When ambient temperatures exceed 72°F, testing shall not begin until the cooling fan is positioned and activated. The cooling fan shall be positioned to direct air to the vehicle cooling system, but shall not be directed at the catalytic converter.

4. Testing shall not begin until the vehicle is properly restrained for ASM testing.

5. Testing shall not begin until the exhaust ventilation system is properly functioning and attached or positioned as necessary.

6. To ensure that the motor vehicle and the dynamometer are in a warmed-up condition prior to official testing, a 30-90 second preconditioning, as determined by the department, shall be performed using the ASM 2525 load simulation.

7. Prior to each test or mode of a test, the system shall automatically select the load setting of the dynamometer.

8. Engine speed shall be monitored by means of an RPM sensor and recorded in the test record.

B. The test sequence shall consist of first chance and, if applicable, second chance tests in both ASM modes described in this section. Vehicles that fail the first chance test as described within 150% of the standard shall receive a second chance test. The department may increase this percentage to 200% when interim or final standards take effect according to 9 VAC 5-91-170 B. The second chance test shall consist of a repetition of the mode or modes that were failed in the first chance test. The department may eliminate the need to do a second chance test if the vehicle has already failed an emission component check.

C. The ASM 2525 mode timer shall start when the dynamometer speed (and corresponding power) are maintained at 25 ± 1.0 miles per hour for five continuous seconds. If the acceleration simulation exceeds the tolerance specified by the analyzer equipment manufacturer for more than five consecutive seconds after the mode timer is started, the test mode timer shall be reset. Should this happen a third time, the test shall be aborted and another started. The dynamometer shall apply the required torque load for 25.0 mph at any testing speed within the tolerance of 25 ± 1.0 miles per hour (i.e., constant torque load over speed range). The torque tolerance shall be $\pm 5.0\%$ of the correct torque at 25 mph.

1. The analyzer shall automatically select the proper load setting for the dynamometer and test standards, based on the Equivalent Test Weight (ETW) and the look-up table in Part XIV (9 VAC 5-91-790 et seq.), using vehicle identification information.

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2. If the dynamometer speed or torque falls outside the speed or torque tolerance for more than two consecutive seconds, or for more than five seconds total, the test mode time shall reset to zero and resume timing. The minimum mode length shall be 45 seconds. The maximum mode length shall be 90 seconds elapsed time.

3. During the 10 second period used for the pass/fail decision, dynamometer speed shall not fall more than 0.5 mph (absolute drop, not cumulative). If the speed at the end of the 10 second period is more than 0.5 mph less than the speed at the start of the 10 second period, testing shall continue until the speed stabilizes enough to meet this criterion.

4. The pass/fail analysis shall begin after an elapsed time of 30 seconds which may include up to 15 seconds of the preconditioning time period if the ASM 2525 torque and speed tolerances are maintained. A pass or fail determination shall be made for the vehicle and the mode shall be terminated as follows:

a. The vehicle shall pass the ASM 2525 mode and the mode shall be immediately terminated if, at any point between an elapsed time of 30 seconds and 90 seconds, the 10 second running average measured values for each pollutant are simultaneously less than or equal to the applicable test standards described in Part XIV (9 VAC 5-91-790 et seq.).

b. The vehicle shall fail the ASM 2525 mode and the mode shall be terminated if subdivision C 4 a of this section is not satisfied by an elapsed time of 90 seconds.

5. Upon termination of the ASM 2525 mode, the vehicle and dynamometer shall immediately begin a transition to the speed required for the ASM 5015 mode. The dynamometer torque shall smoothly transition during the transition period and shall automatically reset to the load required for the ASM 5015 mode as specified in subdivision D 1 of this subsection.

D. The ASM 5015 mode timer shall start when the dynamometer speed (and corresponding power) are maintained at 15 ± 1.0 miles per hour for five continuous seconds. If the acceleration simulation exceeds the tolerance specified by the analyzer system manufacturer for more than five consecutive seconds after the mode timer is started, the test mode timer shall be reset. Should this happen a third time, the test shall be aborted and another started. The dynamometer shall apply the required torque for 15.0 mph at any testing speed within the tolerance of 15 ± 1.0 miles per hour (i.e., constant torque load over speed range). The torque tolerance shall be $\pm 5.0\%$ of the correct torque at 15 mph.

1. The analyzer shall automatically select the proper load setting for the dynamometer and test standards, based on the ETW and the look-up table in Part XIV (9 VAC 5-91-790 et seq.), using vehicle identification information.

2. If the dynamometer speed or torque falls outside the speed or torque tolerance for more than two consecutive seconds, or for more than five seconds total, the mode timer shall reset to zero and resume timing. The minimum mode length shall be 40 seconds. The maximum mode length shall be 90 seconds elapsed time.

3. During the 10 second period used for the pass/fail decision, dynamometer speed shall not fall more than 0.5 mph (absolute drop, not cumulative). If the speed at the end of the 10 second period is more than 0.5 mph less than the speed at the start of the 10 second period, testing shall continue until the speed stabilizes enough to meet this criterion.

4. The pass/fail analysis shall begin after an elapsed time of 30 seconds. A pass or fail determination shall be made for the vehicle and the mode shall be terminated as follows:

a. The vehicle shall pass the ASM 5015 mode if, at any point between an elapsed time of 30 seconds and 90 seconds, the 10-second running average measured values for each pollutant are simultaneously less than or equal to the applicable test standards described in Part XIV (9 VAC 5-91-790 et seq.). If the vehicle passed the ASM 2525 mode, the ASM 5015 mode shall be terminated upon obtaining

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passing scores for all three pollutants.

b. The vehicle shall fail the first chance ASM 5015 mode if subdivision D 4 a of this section is not satisfied by an elapsed time of 90 seconds.

E. The inspector shall perform a second chance test on vehicles which fail either mode of the previous test sequence as follows:

1. If the vehicle fails the first-chance test, the test timer shall reset to zero and a second-chance test shall be performed, except as noted below. The second-chance test shall have an overall maximum test time of 145 seconds if one mode is repeated, an overall maximum time of 290 seconds if two modes are repeated.

2. If the vehicle failed only the ASM 2525 mode of the first chance test, then that mode shall be repeated upon completion of the first chance ASM 5015 mode. The repeated mode shall be performed as described in this section except that the provisions of subdivision C 5 of this section shall be omitted.

3. If the vehicle failed only the ASM 5015 mode of the first chance test, then the first chance ASM 5015 mode shall not end at 90 seconds but shall continue for up to 180 seconds.

4. If the vehicle failed both ASM 5015 and ASM 2525 modes of the first chance test, then the vehicle shall receive a second-chance test for the ASM 2525 mode immediately following the first chance ASM 5015 mode. If the vehicle fails the second-chance ASM 2525 mode, then the vehicle shall fail the test, otherwise the vehicle shall also receive a second-chance ASM 5015 mode test.

9 VAC 5-91-440. Two-speed idle test procedure.

A. The emissions inspection procedure shall be a two-speed idle test as specified in section (II) of Appendix B of 40 CFR Part 51, Subpart S.

1. The two-speed idle test shall consist of a test of the vehicle's exhaust emissions at idle and at 2500 rpm while the vehicle's gear selector is in neutral or park.

2. The idle test shall be administered after the 2500 rpm test. The tests shall be run consecutively.

3. The complete test shall consist of a first chance 2500 RPM mode test; followed by a first chance idle mode test. If either first chance mode fails, the first chance shall be followed by a preconditioning at 2500 RPM for up to three minutes and a second chance 2500 RPM mode test followed by a second chance idle mode. The department may eliminate the need to repeat a mode that passed the first chance test.

4. If the vehicle fails the first chance test, the second chance test and preconditioning shall be omitted if no exhaust hydrocarbon concentration less than 1800 ppm is detected within an elapsed time of 30 seconds. The department may eliminate the need to do a second chance test if the vehicle has already failed an emission component check.

5. Motor vehicle manufacturers and the Environmental Protection Agency may issue special test instructions for specific vehicle models which shall be followed in lieu of the test procedures specified in this section if such instructions are provided through the administrator.

6. In order to pass the two-speed idle test, the vehicle's exhaust shall not exceed the standards listed in 9 VAC 5-91-160.

7. Prior to initiating the two-speed idle exhaust test procedure the following conditions shall be met:

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a. Vehicles which are required to receive OBD or evaporative emissions testing shall be connected to the appropriate test equipment according to 9 VAC 5-91-450 and vehicle and analyzer manufacturer instructions.

b. The OBD test, evaporative system pressure test, if applicable, or fuel filler cap pressure test, including second chance fuel filler cap pressure test if required, shall be performed prior to the two-speed idle test.

B. The idle test mode shall be performed as follows:

1. The vehicle transmission shall be in neutral or park and the parking brake applied; the engine shall be operating at curb idle and there shall not be any manipulation of the engine throttle mechanism.

2. The engine speed (RPM) shall be obtained and shall be between 400 and 1250 RPM for the duration of the test mode.

3. The pass/fail analysis shall begin after an elapsed time of 10 seconds.

4. The idle mode elapsed time shall be 30 seconds.

5. The exhaust concentrations shall be measured as percent carbon monoxide and parts per million hydrocarbons after stabilized readings are obtained and averaged over the last five seconds at the end of the idle test mode.

C. The 2500 RPM test mode shall be performed as follows:

1. The vehicle transmission shall be in neutral or park.

2. The vehicle engine speed shall be increased from idle to between 2200 and 2800 RPM and maintained at that level.

3. If the engine speed varies outside the parameters of 2200 to 2800 RPM for more than two seconds during a sampling period, the 2500 RPM mode shall be invalid and the 2500 RPM test shall be restarted. If the engine speed varies outside such parameters for more than a cumulative total of 10 seconds, the 2500 RPM test mode shall be invalid and another initiated.

4. The pass/fail analysis shall begin after an elapsed time of 10 seconds.

5. The 2500 RPM mode elapsed time shall be 30 seconds.

6. The exhaust concentrations shall be measured as percent carbon monoxide and parts per million hydrocarbons after stabilized readings are obtained and averaged over the last five seconds at the end of the 2500 RPM test mode.

9 VAC 5-91-450. Evaporative system pressure test and gas cap pressure test procedure.

A. The evaporative system pressure test, if applicable, and fuel filler cap pressure test shall be performed according to the requirements of 40 CFR 51.357(a)(10) and (b)(3), or according to alternate procedures approved by the Environmental Protection Agency and approved by the department as part of a certified analyzer system.

B. The evaporative system pressure test shall be performed as follows:

1. The gas cap shall be removed and the appropriate adapter connected to the fuel filler inlet.

2. The gas cap shall be connected to an appropriate adapter, either as part of the adapter

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connected to the fuel filler inlet or as part of a separate gas cap pressure test rig.

3. The vapor hose or line in the fuel system connecting the evaporative canister to the fuel tank shall be clamped as close as possible to the canister. If the vapor line cannot be clamped to prevent vapor passage, it shall be disconnected from the canister and plugged to prevent vapor passage.

4. The fuel tank shall be pressurized with ambient air, or a suitable, equivalent gas, to a pressure of 14 inches, ± 0.5 inches, of water.

5. The flow shall be turned off and the decay of pressure monitored for up to two minutes.

6. If at any time during the two minutes the fuel tank vapor system is being monitored the pressure drops from the starting pressure by more than six inches of water, the test shall be terminated and the vehicle shall be determined to fail the evaporative system pressure test.

7. After two minutes, the clamp shall be removed from the vapor line or the line shall be unplugged and the system monitored for a drop in pressure. If a pressure drop is detected, and the fuel tank vapor system did not fail the conditions in step 6 above, the vehicle shall pass the evaporative system pressure test. If the gas cap is also connected to the fuel filler neck adapter during the evaporative system pressure test then the vehicle shall also pass the gas cap pressure test.

8. If no pressure drop was detected after unclamping or unplugging the vapor line, the fuel tank, and cap if attached to the fuel inlet adapter, shall be pressurized to a pressure of 28 inches, ± 1.0 inches, of water, and steps 5, 6, and 7 above repeated.

9. At the termination of the test, the vapor hose and gas cap shall be reinstalled.

C. The gas cap pressure test shall be performed using the following procedures:

1. The gas cap shall be connected to an adapter on a separate gas cap pressure test rig and shall be pressurized to a pressure of 28 inches, ± 1.0 inches, of water.

2. The flow shall be turned off and the decay of pressure monitored for up to two minutes.

3. If at any time during the two minutes the gas cap pressure test rig is being monitored the pressure drops from the starting pressure by more than six inches of water, the test shall be terminated and the vehicle shall be determined to fail the evaporative system pressure test; otherwise the vehicle shall pass the gas cap pressure test.

4. Vehicles equipped with more than one functional fuel tank shall have all gas caps tested.

D. If the vehicle fails the gas cap pressure test, a new gas cap may be installed and a second chance gas cap pressure test performed. Any failure and subsequent pass under this second chance testing must be recorded as part of the emissions inspection and reported to the customer.

9 VAC 5-91-460. [Repealed.]

9 VAC 5-91-470. [Repealed.]

9 VAC 5-91-480. Emissions related repairs.

A. Emissions related repairs generally include only those adjustments to and maintenance and repair of the motor vehicle components and systems which are directly related to the reduction of exhaust and evaporative emissions necessary to comply with the applicable emissions standards. The expenditure for emissions related repairs does not include the inspection fee as specified in § 46.2-1182 of the Virginia Motor Vehicle Emissions Control Law or the expenses associated with the adjustments to and maintenance, replacement, and repair of emissions control equipment if the need for such adjustment,

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maintenance, or repair is due to obvious disconnection of, tampering with, or abuse to such emissions control equipment.

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B. Repairs and maintenance including but not limited to the following systems may qualify as emissions related repairs insofar as the purpose is to reduce exhaust or evaporative emissions:

1. Air intake systems.
2. Ignition systems.
3. Electrical systems.
4. Fuel control systems.
5. Emissions control systems.
6. Basic engine systems.
7. Engine cooling systems for microprocessor based air and fuel control systems.
8. On-board diagnostic systems.

C. The cost of emissions related repairs may qualify for repair costs applicable toward the waiver cost threshold under 9 VAC 5-91-420 N 5 only if performed at a certified emissions repair facility. The repairs shall be performed by or under the supervision or approval of a certified emissions repair technician.

9 VAC 5-91-490. Engine and fuel changes.

A. For those vehicles in which the original engine has been replaced, the following conditions shall apply:

1. The emissions standards and applicable emissions control equipment for the year and model of the vehicle body or chassis, or the engine, whichever is newer, according to the registration or title, shall apply.

2. For those diesel powered vehicles which have been converted to operate on fuels other than diesel, the emissions standards and applicable emissions control equipment for the year, make and model of the gasoline equivalent for the vehicle chassis, according to the registration, shall apply.

3. Exceptions and final determinations regarding this section may be granted by the department provided information is verifiable by inspection of the vehicle engine and emissions control equipment by the department.

B. For those vehicles that were assembled by other than a licensed manufacturer, such as kit cars, the applicable emissions control equipment and emissions standards shall be based upon a determination of the year of the vehicle engine. The year of the engine shall be presumed to be that stated by the vehicle owner unless it is determined by the department, after physical inspection of the vehicle engine, that the year of the engine is other than stated by the owner. The emissions standards for a vehicle of this classification shall be determined by the year of manufacture of the engine.

C. For those vehicles which have the capability or are equipped to operate on either gasoline or an alternative fuel, and are subject to emissions inspections, the vehicle shall be tested while operating on gasoline containing no more than 15% ethanol or methanol.

D. In order to provide for the accurate inspection and registration coordination of motor vehicles in which the original engine has been replaced, questions shall be referred to the department for resolution.

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PART VII.
Vehicle Emissions Repair Facility Certification.

9 VAC 5-91-500. Applicability and authority.

A. The director shall issue, deny, suspend or revoke certification and establish procedures and other instructions for the operation of vehicle emissions repair facilities where vehicle emissions related repairs will apply toward a vehicle emissions inspection waiver.

B. The provisions of this part apply to current certified facilities and applicants for initial certifications, renewals of certification, reinstatements and requalifications.

C. The director shall issue a certification for any emissions repair facility qualified or requalified under 9 VAC 5-91-510 except facilities whose suspension period has not expired.

9 VAC 5-91-510. Certification qualifications.

A. Application for certification shall be made to the department in accordance with procedures approved by the department.

B. Applicants shall demonstrate to the department the ability to conform to this chapter.

C. Certifications shall be valid only to the emissions repair facility, owner, or lessee for which it is issued and may not be transferred or used at any other emissions repair facility nor by any other owner.

D. Transfer or sale of business, or changes in partnership, name or location shall require notification to the department and shall require new certification.

E. The department may require proof of business ownership, articles of incorporation, partnership agreements and lease agreements prior to certification of an emissions repair facility.

F. All emissions repair facility certification documentation shall be posted in a conspicuous place on the certified premises, within view of the public and approved by the department.

G. Certification is valid for time periods determined by the department, not to exceed three years from the end of the month in which certified. The director may extend such certification once, for up to six months from the original expiration date, if shown that the availability of training or equipment prevent recertification prior to expiration.

H. Equipment, tools, and reference materials, including but not limited to the following list, are required to be available in certified emissions repair facilities contingent on commercial availability.

1. For vehicles subject to the Northern Virginia emissions inspection program and serviced by that emissions repair facility, current reference material, either in manual or electronic form, to include:

- a. Emissions control systems and application guides.
- b. Emissions related repair guides.

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2. Necessary tools and equipment, either as components or as a complete system, for emissions related repairs as listed below:

a. A four-gas exhaust emissions analyzer capable of analyzing exhaust emissions from vehicles on which emissions repairs are being performed.

b. Oscilloscope or other automotive analyzer capable of displaying ignition patterns, cylinder power contributions, and square wave and injection patterns of vehicles.

c. Ammeter, DC.

d. Ohmmeter.

e. Voltmeter, AC/DC.

f. Tachometer, RPM meter.

g. Fuel pressure gauge capable of fuel injection diagnosis.

h. Ignition timing light with timing advance meter and adjustment.

i. Compression test gauge and cylinder leak-down tester.

j. Vacuum pump with gauge for applying simulated manifold vacuum to emissions control devices.

k. Scan tools, supplemental analyzer provisions, or detailed reference materials sufficient to allow the extraction and interpretation of computer fault codes from any vehicle being repaired that is equipped with an exhaust gas oxygen sensor and malfunction indicator light.

l. OBD scan tool designed to interface with OBD vehicles meeting the requirements of 40 CFR 85.2231.

9 VAC 5-91-520. Expiration, reinstatement, renewal, and requalification.

A. Upon expiration, suspension, or revocation of certification or inability to conform to the qualifications for certification, vehicle emissions related repairs performed by the emissions repair facility shall no longer be applicable toward a vehicle emissions inspection waiver as described in 9 VAC 5-91-420 N until such time as the facility's certification is reinstated or the facility meets the qualifications for certification.

B. A new application is required after revocation or expiration of the certification.

C. The director shall reinstate an emissions repair facility certification at the end of a suspension period upon notification by the facility that the suspension period has ended.

D. Requalification may be required at any time by the department based on the results of monitoring of emissions repair facility performance or changes in applicable vehicle emissions control or repair technology.

E. If an emissions repair facility fails to become requalified within 90 days after notice of requalification requirement by the department, the certification shall expire.

F. The department will endeavor to notify facilities prior to the expiration of certification. However, it is the responsibility of the emissions repair facility to have a current valid certification.

G. Expiration of certification or revocation of certification shall require reapplication.

H. Upon expiration or notification of revocation, the emissions repair facility shall surrender to the department all certification documents issued by the department.

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I. Any applicant whose certification has been revoked shall make a showing to the director that the condition causing the revocation has been corrected to the satisfaction of the director.

9 VAC 5-91-530. Emissions repair facility operations.

A. Emissions repair facilities shall maintain applicable repair and certification related records available for inspection and audit by the department any time during normal business hours for 12 months.

B. Emissions repair facilities shall employ at least one certified emissions repair technician during posted emissions repair station hours. Facilities shall immediately notify the department if repairs applicable toward a waiver are unable to be performed for any reason.

C. Emissions repair facility operations shall be conducted in accordance with applicable statutes and this chapter.

D. Emissions repair facilities shall provide emissions repair data and other such information related to repair effectiveness as required by the department in accordance with subsection A of this section for the purposes of emissions related repair performance monitoring. The facilities shall ensure that emissions repair data forms (i) are properly and completely filled-out, (ii) are signed by the certified emissions repair technician employed by that facility who performed, supervised or approved the repairs, and (iii) are provided to the customer along with a receipt, invoice or repair order for the work performed.

E. No facility shall be represented as a certified emissions repair facility unless a valid certification has been issued for that facility by the director.

F. Emissions repair facilities shall cooperate with the department during the conduct of audits, investigations and complaint resolutions.

G. Equipment, tools, and reference materials must be maintained in proper working order.

H. Emissions repair facilities shall maintain a file of the name, address, and identification number of all currently employed certified emissions technicians and shall provide such information to the department upon request.

I. Repairs to qualify toward the waiver cost threshold shall be conducted in accordance with 9 VAC 5-91-420 N , 9 VAC 5-91-480 C and 9 VAC 5-91-580 D.

9 VAC 5-91-540. Sign and certificate posting.

A. Emissions repair facilities performing emissions related repairs for the public shall post a sign approved or provided by the department designating the location as a certified vehicle emissions repair facility in a conspicuous location on the premises, in view of the public and approved by the department.

B. Emissions inspection station certificates shall be posted in a frame, in a conspicuous place on the permitted premises, within view of the public and approved by the department.

C. Emission repair facilities performing emissions related repairs for the public shall post all signs in a manner consistent with local sign ordinances or codes.

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PART VIII.
Emissions Repair Technician Certification and Responsibilities.

9 VAC 5-91-550. Applicability and authority.

A. The director shall issue, deny, suspend or revoke certifications to perform emissions related adjustments and repairs which are intended to apply towards a vehicle emissions inspection waiver.

B. The provisions of this part apply to current certified technicians and applicants for initial certifications, renewals, requalifications and any reinstatement of certification.

C. The director shall issue a certification to any person qualified or requalified under 9 VAC 5-91-560 except persons whose suspension period has not expired.

9 VAC 5-91-560. Certification qualifications for emissions repair technicians.

A. Application for certification under this part shall be made to the department and in accordance with procedures approved by the department.

B. Applicants shall demonstrate to the department the ability to conform with applicable motor vehicle laws and this chapter.

C. Certification is valid only for the person to whom it is issued.

D. Emissions repair technicians may be certified to perform emissions related repairs at more than one certified station.

E. Certification is valid for a time period determined by the department, not to exceed three years from the end of the month in which issued. The director may extend such certification once, for up to six months from the date of original expiration, if shown that the availability of training or equipment prevent recertification prior to expiration.

F. The requirements for emissions repair technician certification are as follows:

1. The certification process shall be administered by the department or its agent according to procedures of the department. Before applicants are certified, they must comply with the requirements of this section. The department will notify applicants of the certification requirements prior to testing.

2. An applicant shall demonstrate knowledge, skill, and competence concerning the adjustment and repair of vehicle emissions control systems. Such knowledge, skill and competence shall be demonstrated by passing a qualification test and certification process, which may include training, as approved by the department. Such demonstration may include knowledge of the following:

- a. Operation and purpose of emissions control systems.
- b. Relationship of hydrocarbon, oxides of nitrogen and carbon monoxide emissions to timing and air-to-fuel ratio control and vehicle load as applicable to the emissions inspection required.
- c. Adjustment and repair to manufacturers' specifications.
- d. Contemporary diagnostic and engine tune-up procedures.
- e. Emissions related adjustment and repair requirements for all vehicles failing an emissions inspection, in particular, the adjustment and repair of those systems described in 9 VAC 5-91-480.
- f. Other such relevant emissions related repair criteria, as determined by the

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department.

g. Other provisions of this chapter applicable to emissions related repair.

G. Any applicant whose certification has been revoked shall make a showing to the director that the condition causing the revocation has been corrected to the satisfaction of the director.

9 VAC 5-91-570. Expiration, reinstatement, renewal and requalification.

A. Upon expiration, suspension, or revocation of the certification, the emissions repair technician shall no longer be authorized to perform emissions related repairs and have them apply toward emissions inspection waivers as described in 9 VAC 5-91-420 N.

B. Certification of an emissions repair technician is required as a result of revocation or expiration of the certification.

C. The director shall reinstate certification of an emissions repair technician at the end of a suspension period upon notification by the emissions repair technician that the suspension period has ended.

D. Requalification may be required at any time by the department based on the results of monitoring of the performance of the emissions repair technician or based on changes in applicable vehicle emissions control or repair technology. Failure to requalify within three months of notification shall result in expiration of the emissions repair technician certification.

E. The department will endeavor to notify technicians prior to the expiration of their certification. However, it is the responsibility of the emissions repair technician to maintain a current certification.

F. Upon expiration or notification of revocation or suspension, the technician shall surrender to the department all certification documents issued by the department.

G. Requalification requirements for all emissions repair technicians.

1. When necessary to update the technical qualifications of emissions repair technicians, or when technician performance monitoring indicates a need for additional training or other action, holders of emissions repair technician certifications shall be required to requalify.

2. Emissions repair technicians shall be required to requalify within 90 days from the date of written notification by the department. Notice of this requirement shall be mailed to the address of record as maintained by the department. The notice shall inform the person of the necessity of requalification and the nature of such skills, systems, and procedures requiring the training for the continued performance as an emissions repair technician. The notice shall give the name and location of training sources approved or accredited for purposes of retraining, the necessity of requalification by a certain date, and the nature and evidence of documentation to be filed with the department evidencing such requalification.

9 VAC 5-91-580. Certified emissions repair technician responsibilities.

A. No person shall represent himself as a certified emissions repair technician without holding a valid certification issued by the director.

B. Certification documents shall be available on the premises where the emissions repair technician is performing emissions related repairs and available to department personnel upon request.

C. Emissions repair technicians shall keep their current mailing address and place of employment on file with the department.

D. Certified emissions repair technicians shall properly complete and sign forms, including but not

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limited to the repair section of the vehicle emissions inspection report, indicating the diagnosis or reason for failure of the emissions inspection, the type of emissions related repair work performed, the itemized and total cost of such repairs, and provide other data the department requires for consideration of emissions inspection waiver requests. The technician shall sign only repair data forms for repairs which were performed or supervised by the technician while on duty at the repair facility.

E. All emissions repair technicians shall cooperate with the department during the conduct of audits, investigations and complaint resolution.

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PART IX.
Enforcement Procedures.

9 VAC 5-91-590. Enforcement of regulations, permits, licenses, certifications and orders.

A. Licensees, permittees, certified emissions repair technicians and certified emissions repair facilities shall be subject to the provisions of this chapter, be responsible for their own actions and be responsible for the actions of persons employed by them.

B. A violation of the Virginia Motor Vehicle Emissions Control Law, any provision of this chapter or any permit, license, certification or order shall be cause for a notice of violation to be served on the alleged violator, citing the applicable provisions of the Virginia Motor Vehicle Emissions Control Law, this chapter, the permit, license, certification requirement or order, or any combination thereof involved, and the facts on which the alleged violation is based.

C. Owners are responsible for the overall operation of the emissions inspection station or emissions repair facilities including the actions of its employees and any licensed emissions inspector or certified emissions repair technician working at that station or facility and may be issued a notice of violation for any violation of this chapter by such persons.

D. A notice of violation may be addressed through a consent order or through the informal fact finding or formal hearing process.

E. The director or a designated representative shall issue and sign consent orders, conduct informal fact findings and make all case decisions. Formal hearings shall be conducted in accordance with § 2.2-4020 of the Administrative Process Act.

F. Nothing in this chapter shall prevent the department from negotiating a consent order in lieu of a penalty in any case.

9 VAC 5-91-600. General enforcement process.

A. Upon issuance of a notice of violation, attempts shall be made to negotiate a consent order. The negotiation process may take the form of two tiers, the first involving negotiations with the department field staff. The second tier involves subsequent negotiations with the department's management personnel for regional compliance, mobile sources operations, or enforcement if the first tier negotiations are unsuccessful and the alleged violator wishes to continue negotiations.

B. If the parties cannot agree on a consent order, an informal fact finding shall be held after reasonable notice in accordance with § 2.2-4019 of the Administrative Process Act. Upon consent of all parties, the informal fact finding may be waived and a formal hearing shall be held after reasonable notice in accordance with § 2.2-4020 of the Administrative Process Act. During these proceedings, the department and the alleged violator may present facts and circumstances surrounding the alleged violation in accordance with the Administrative Process Act.

C. A formal hearing shall be held to suspend emissions inspection station permits, unless the parties agree to hold an informal fact finding and waive a formal hearing and agree that the decision from the informal fact finding is the final decision for purposes of Article V (§ 2.2-4025 et seq.) of the Administrative Process Act. An emissions inspection station permit may be suspended pursuant to an informal fact finding, provided a formal hearing is held within 10 days from the date of suspension in accordance with § 46.2-1185 of the Virginia Motor Vehicle Emissions Control Law and § 2.2-4020 of the Administrative Process Act.

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D. As provided in § 46.2-1185 of the Virginia Motor Vehicle Emissions Control Law, the director can summarily suspend an emissions inspection station permit without a formal hearing and require the permit holder to immediately cease performing emissions inspections. Within 10 days of such action, a formal hearing shall be held to affirm, modify, amend, or cancel the suspension unless the affected party agrees to waive the formal hearing and allow the suspension to remain in effect.

E. With respect to appeals of penalties imposed pursuant to an informal fact finding, the presiding officer shall be a designee of the director other than the regional emissions inspection program manager or any emissions inspection program staff member.

F. Any case decision made pursuant to an informal fact finding must be in writing, must inform the alleged violator of the penalty being imposed and the basis for any adverse decision, and must inform the named party of his right to appeal.

1. Any affected party has the right to request a formal hearing to appeal an adverse decision from an informal fact finding unless the parties agree before the decision is rendered to waive the formal hearing and that the decision shall be considered a final decision for purposes of Article V (§ 2.2-4025 et seq.) of the Administrative Process Act.

2. A written informal fact finding decision shall contain a statement that the affected party has the right to request a formal hearing in order to appeal the decision within 10 days of notification of the decision or, if previously agreed by the parties, that the decision is final and the affected party has the right to appeal the decision to court.

3. Any request for a formal hearing shall be made within 10 days of notification of the decision by the affected party, in writing, to the department representative who made the informal fact finding decision.

G. Case decisions made pursuant to a formal hearing shall be made by the director or a designated representative. They must be in writing and contain findings of fact and conclusions of law that set forth the basis for any adverse decision, inform the alleged violator of the penalty being imposed and inform the named party of his right to appeal that decision to court.

H. All permits, licenses and certifications shall be surrendered to the department upon notice of revocation. Emissions inspection stations and emissions repair facilities shall also surrender to the department all forms, data media and documents issued by or purchased from the department.

I. If the case decision is a final decision for purposes of Article V (§ 2.2-4025 et seq.) of the Administrative Process Act, the department need not act further except to enforce any penalty or order issued pursuant to the decision.

J. If the director determines that a permittee, licensee, or holder of a certification is not complying with the Virginia Motor Vehicle Emissions Control Law, this chapter, any case decision, penalty or consent order issued pursuant to this chapter, the director may seek appropriate criminal or civil judicial enforcement, or both, in accordance with § 46.2-1187 and § 46.2-1187.2 of the Virginia Motor Vehicle Emissions Control Law.

9 VAC 5-91-610. Consent orders and penalties for violations.

A. Penalties for violations of the Virginia Motor Vehicle Emissions Control Law, this chapter, permits, licenses, certifications, and orders include letters of reprimand, probation, suspension, and revocation.

B. Penalties may be imposed as a result of an informal fact finding or formal hearing, and may be negotiated by the parties for inclusion in consent orders.

C. A consent order shall contain an agreed-to penalty in the form of a letter of reprimand,

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probationary period, or suspension, or a civil charge, a combination thereof, or other agreed upon actions.

D. For any minor violation, as described in 9 VAC 5-91-630, the director may negotiate or impose pursuant to an informal fact finding or formal hearing:

1. A letter of reprimand.

2. For the second minor violation within 24 months, a letter of reprimand and a probationary period not to exceed 12 months.

E. For any major violation, as described in 9 VAC 5-91-620, the director may negotiate or impose pursuant to an informal fact finding or formal hearing:

1. A letter of reprimand.

2. A letter of reprimand and a probationary period not to exceed 12 months.

3. A suspension of a permit, license or certification followed by a probationary period not to exceed 12 months.

4. A revocation of a permit, license or certification.

F. Suspensions shall be for a period not to exceed one year.

G. In the case of multiple violations, suspensions may run concurrently.

H. No application for a permit, license, or certification from a person whose permit, license, or certification has been revoked shall be considered by the director until (i) 12 months have elapsed from the date of revocation and (ii) until the conditions of 9 VAC 5-91-240 D, 9 VAC 5-91-390 D, 9 VAC 5-91-520 I or 9 VAC 5-91-560 G have been satisfied.

I. Emissions inspectors, certified emissions repair technicians and certified emissions repair facilities are subject to the same penalties that may be imposed on emissions inspection station permit holders. Such penalties shall be imposed separately on each affected party only as part of a consent order or through an informal fact finding or formal hearing. The director shall consider a party's level of responsibility for the violation in negotiating a consent order or in imposing a particular level of penalty pursuant to an informal fact finding or a formal hearing.

J. Any intentional falsification of an emissions inspection shall result in a revocation; or in a suspension of the inspector's license, or the station permit for not less than six months, or an equivalent civil charge, or both.

K. As a condition of probation, terms may be imposed during the probationary period that must be complied with by the violator. The terms may include a requirement that the permittee, licensee, or certified repair technician perform additional or periodic demonstrations of competency or obtain additional training. Completion of such terms to the satisfaction of the department may serve as a basis for reducing the probationary period.

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9 VAC 5-91-620. Major violations.

A. Major violations are considered the most serious of offenses resulting from unacceptable performances in the conduct of emissions inspections, the operation of emissions analyzer systems, and the conduct of emissions related repairs. Such violations are of a nature that would directly affect the integrity, credibility, and emissions reduction effectiveness of the vehicle emissions inspection program.

B. A violation of the following provisions of this chapter by any person or facility whether or not permitted, licensed or certified, shall constitute a major violation:

9 VAC 5-91-220 B, C, E, F	9 VAC 5-91-420 (except D 4)
9 VAC 5-91-290 B, C, D, E, G	9 VAC 5-91-430 A 1, 2, 3, 5, 8
9 VAC 5-91-300 B, C	9 VAC 5-91-440 A 1, 7
9 VAC 5-91-320 A, D	9 VAC 5-91-450 A, C, D
9 VAC 5-91-330	9 VAC 5-91-480 A
9 VAC 5-91-340 A, D	9 VAC 5-91-490 A, B, C
9 VAC 5-91-360 B, C, E	9 VAC 5-91-510 C, H
9 VAC 5-91-370 A, C	9 VAC 5-91-530 A, B, D, E, F, G
9 VAC 5-91-380 F, I	9 VAC 5-91-560 C
9 VAC 5-91-400	9 VAC 5-91-580 A, D, E
9 VAC 5-91-410	9 VAC 5-91-640 B

C. Obtaining a permit, license or certification by false statement or misrepresentation or operating under a permit, license or certification while not in compliance with the conditions for such permit, license, or certification is a major violation and shall be grounds for revocation.

D. Use of alcohol or illegal drugs while performing emissions inspections or emissions-related repair, or while under the influence of alcohol or illegal drugs, shall be considered a major violation and shall be grounds for revocation of the license, permit or certificate.

E. Any third and subsequent minor violation within 24 months shall be considered a major violation.

F. Any violation of the Virginia Motor Vehicle Emissions Control Law and this chapter that is not specifically identified in this section may be treated as a major violation if the director determines on a case-by-case basis that the violation fits the criteria for major violations set forth in subsection A of this section.

9 VAC 5-91-630. Minor violations.

A. Although they may not necessarily directly affect emissions reduction effectiveness, minor violations are considered to be serious enough to influence the overall effectiveness of the Motor Vehicle Emissions Control Program, and pertain to station operations, quality assurance, quality control, unacceptable security of documents and records, maintenance of certain required equipment and systems, emissions repair efficiency and such other items as are necessary to maintain program uniformity, and to ensure the ability to function as a permittee, licensee or certified emissions repair technician or facility.

B. A violation of any provision of this chapter not previously listed under subsections B, C and D of 9 VAC 5-91-620 shall constitute a minor violation, as they pertain to a permittee, licensee, or certified emissions repair technician or facility, unless the director determines that the violation is a major violation in accordance with subsection F of 9 VAC 5-91-620.

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PART X.
Analyzer System Certification and Specifications for
Enhanced Emissions Inspection Programs.

9 VAC 5-91-640. Applicability.

A. The provisions of this chapter apply to any system used for measuring exhaust gases and evaporative emissions from motor vehicles in the Virginia Motor Vehicle Emissions Control Program.

B. No owner or other person shall conduct emissions inspections required by the Virginia Vehicle Emissions Control Program pursuant to this chapter unless the analyzer system used to perform such inspections is certified by the department and such other required equipment meets the provision of this chapter.

9 VAC 5-91-650. Design goals.

A. The analyzer system shall be designed for maximum operational simplicity with a minimum number of operational decisions required by the emissions inspector in the performance of a complete emissions analysis including exhaust tests, evaporative system or fuel filler cap pressure tests, other emissions-related electronic or mechanical tests, or a combination of such tests.

B. The analyzer system shall be unaffected by ambient conditions in a typical emissions inspection station environment and its use shall be primarily for compliance inspection purposes. It shall be capable of providing emissions characteristics, independent of the inspection function, which can be used for vehicle diagnostic work as well.

C. The analyzer system shall be of a design which can perform ASM testing using an analyzer certified under 9 VAC 5-91-680 with the addition of (i) a dynamometer, (ii) a NO_x analyzer, (iii) evaporative system pressure test equipment, (iv) fuel filler cap pressure test equipment, and (v) a two-dimensional bar code reader and laser printer.

D. The analyzer shall be readily upgradable, without replacing the existing central processing unit, to incorporate on-board diagnostic (OBD) testing equipment and additional electronic vehicle identification equipment such as video and audio processes.

9 VAC 5-91-660. Warranty; service contract.

A. A certified emissions analyzer system shall include, at a minimum, a one year warranty, including parts and labor, which shall begin on the day that the emissions inspection station is permitted by the department, or that the emissions analyzer system is installed and operational, whichever is later. The disk drive system in the central processing unit shall be warranted for two years.

B. Emissions analyzer system manufacturers or vendors shall offer, at a price to be stated at the time such system is offered for sale, an extended warranty for an additional five years beyond the initial one-year warranty.

C. Emissions analyzer system manufacturers or vendors shall offer, at a price to be stated at the time such system is offered for sale, a maintenance service contract for the period of time remaining from the startup date to a date six years afterward.

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9 VAC 5-91-670. Owner provided services.

A. The owner of an emissions inspection station shall enter into an agreement with a manufacturer or its authorized representative to provide the following services to the emissions inspection station at an initial fixed cost per analyzer system to be agreed upon by both parties.

1. Delivery, installation, calibration, and verification of the proper operating condition of an analyzer system which has been certified in writing by the department.

2. Training of all inspectors employed by the emissions inspection station at the time of installation in (i) the proper use, maintenance, and operation of the exhaust analyzer system, (ii) the step-by-step procedure for performing an emissions inspection and any evaporative emissions control system test or fuel filler cap pressure test required, and (iii) proper safety precautions for dynamometer use and exhaust and calibration gas ventilation procedures.

3. Annual updates, except those to be performed by department personnel, of the preexisting internal computer software of the analyzer as specified by the department including, but not limited to:

- a. Changes to the emissions standards;
- b. Changes to the listed vehicle codes;
- c. Changes to the items in the printing system to correspond to changes in other requirements; and
- d. Additions or changes to the emissions control equipment list.

B. Emissions inspection stations shall maintain their analyzer systems in good working condition such that they continue to meet certification requirements. Any further arrangements regarding service or maintenance are at the discretion of the emissions inspection station and the manufacturer or equipment vendor.

C. Repair or replacement of analyzer system components, other than for normal maintenance, must be performed by the analyzer system manufacturer or authorized agent.

9 VAC 5-91-680. Certification of analyzer systems.

A. No analyzer system may be installed, sold or represented as a certified enhanced analyzer system without prior written certification by the department.

B. The analyzer system must have a certificate from the manufacturer that it meets the specifications of 40 CFR Part 85, Subpart W. This certification is necessary so that inspections performed using that analyzer will qualify applicable vehicles for warranty repair coverage according to the provisions of § 207(b) of the federal Clean Air Act.

C. A person requesting the certification of an emissions analyzer system for use in the Virginia Motor Vehicle Emissions Control Program shall make application to the department using procedures approved by the department.

D. The analyzer system, in order to become certified for use and be used for emissions inspections, shall conform to the equipment specifications and quality control requirements of EPA Technical Guidance

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document EPA-AA-RSPD-IM-96-2 (see 9 VAC 91-50) unless requirements contained therein are excluded or superseded by requirements of this chapter as enumerated below.

1. Vehicles powered by a fuel other than gasoline are not covered by ASM testing and references to emissions standards and correction factors to test such vehicles do not currently apply to ASM testing. (Ref. EPA-AA-RSPD-IM-96-2, § 85.1(b)(1)(iv)).
 2. The emissions inspection equipment is not required to incorporate vehicle brake sensing. (Ref. EPA-AA-RSPD-IM-96-2, § 85.2(a)(5)).
 3. The preconditioning period for all vehicles undergoing an ASM test may be up to 90 seconds. System prompts regarding queuing time are unnecessary. (Ref. EPA-AA-RSPD-IM-96-2, § 85.2(b)(10)(i)).
 4. All OBD vehicles shall have engine RPM and emissions-related information read through the OBD connection pending availability and installation of necessary hardware and software or January 1, 2003, whichever occurs last. Emissions inspection equipment shall have the necessary equipment to perform such testing by this date, or as specified in 9 VAC 5-91-420 G 3. (Ref. EPA-AA-RSPD-IM-96-2, § 85.3(c)(5)).
 5. Vehicles subject to ASM testing shall receive the ASM 2525 and ASM 5015 modes in that sequence, followed by any second chance testing for which the vehicle is eligible in the same sequence. Second chance tests shall only be performed on vehicles which failed the first chance test within the software specifications of all applicable standards. (Ref. EPA-AA-RSPD-IM-96-2, § 85.2(d) and (e)).
 6. Dynamometers shall be calibrated through a coast-down procedure every 72 hours. (Ref. EPA-AA-RSPD-IM-96-2, § 85.4(b)(1)).
 7. Analyzer calibration gas bottles shall be bar-coded or have bar-coded labels providing the specifications of the gas contained within and the analyzer system shall require a reading of these specifications, through the system bar code reader, whenever the bottles are changed. The calibration gases, therefore, may have up to a 5.0% blend tolerance. (Ref. EPA-AA-RSPD-IM-96-2, § 85.4(d)(2)(iv)).
 8. Analyzer audit gas bottles shall be bar-coded or have bar-coded labels providing the specifications of the gas contained within and the analyzer system shall require a reading of these specifications, through the system bar code reader, whenever the audit is conducted. The calibration gases, therefore, may have up to a 5.0% blend tolerance. (Ref. EPA-AA-RSPD-IM-96-2, § 85.4(d)(3)(iv)).
- 9 VAC 5-91-690. Span gases: gases for calibration purposes.
- A. The gases used by emissions inspection stations in the emissions inspection shall be approved by the department and shall comply with the requirements of this section.
 - B. The gas concentrations, requirements, and tolerances of gases shall conform to the specifications contained in the EPA Technical Guidance document, EPA-AA-RSPD-IM-96-2 (see (VAC 5-91-50), and each container shall bear a bar-coded label containing concentration and tolerance information as required for calibration and audit purposes.
 - C. Gases shall be supplied in containers which meet all the provisions of the Occupational Safety and Health Administration as specified in 29 CFR 1910.101, Subpart H.
 - D. Gases shall be manufactured in accordance with the U.S. Environmental Protection Agency technical report, EPA-AA-TSS-83-8-B (see 9 VAC 5-91-50).
 - E. The station owner shall maintain a comprehensive, up-to-date list provided by the department, including addresses and phone numbers, of gas blenders approved by the department.
 - F. Each analyzer instrument shall be permanently labeled with its optical correction factor (also

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referred to as "C" factor, propane equivalency factor, or propane to hexane conversion factor), carried to at least two decimal places (within the gas accuracy limits), e.g., (0.52). Factor confirmation shall be made on each assembled analyzer by measuring both N-hexane and propane on assembly line quality checks.

9 VAC 5-91-700. Calibration of exhaust gas analyzers.

The department shall use, and require for use, gases and containers meeting the following parameters, blends, and specifications in the calibration of exhaust gas analyzers:

1. The calibration gases for standardizing instruments shall conform to the provisions outlined in EPA-AA-RSPD-IM-96-2.

2. Analyzers shall pass a two-point gas calibration for HC, CO, CO₂ and NO, within 72 hours before each test.

3. Analyzers shall pass a five-point gas audit for HC, CO, CO₂, and NO at least two times within 12 months, and each time an analyzer emissions measurement system, sensor, or other electronic components are repaired or replaced in response to an audit failure.

9 VAC 5-91-710. Upgrade of analyzer system.

A. Any requirement to upgrade a certified emissions analyzer system beyond the specifications and requirements described in this chapter and EPA-AA-RSPD-IM-96-2 shall apply to all such systems certified under this chapter and shall require an amendment to this chapter.

B. Such upgrade may include, but not be limited to, enhanced on-board diagnostic (OBD) testing equipment, any evaporative system pressure test and electronic vehicle identification systems such as video and audio processes.

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PART XI.
Manufacturer Recall.

9 VAC 5-91-720. Vehicle manufacturer recall.

A. Motor vehicles subject to the enhanced emissions inspection program shall have any known emissions-related, vehicle manufacturer recall requirement satisfied prior to testing, as feasible and practicable pending the availability of an emissions recall database, installation of necessary hardware and software, and on a schedule as determined by the director.

B. Manufacturers' emissions-related recall requirements may be pursuant to either a "Voluntary Emissions Recall" as defined at 40 CFR 85.1902(d) or to a remedial plan determination made pursuant to 42 USC § 7541(c).

C. The motor vehicle owner shall provide proof of compliance with such recall requirement to the emissions inspector or to the department.

1. Such proof shall consist of dated receipts from a motor vehicle dealer or repair facility authorized by the vehicle manufacturer to perform such repair or adjustment required by the recall.

2. The motor vehicle owner is responsible for obtaining satisfactory resolution of any such recall requirement and retaining all pertinent records and data.

D. Notification by mail to the motor vehicle owner of an emissions-related manufacturer recall at least 60 days prior to the requirement for an emissions inspection shall constitute adequate notice. Such notice may be provided through motor vehicle registration renewal notification, motor vehicle dealer notification, notification by the department, or other means.

9 VAC 5-91-730. Exemptions; temporary extensions.

A. An exemption to the requirement to comply with emissions-related manufacturer recall may be granted by the director upon a showing, documented by corroborating information from the vehicle manufacturer or dealer, that such recall is no longer valid or can no longer be complied with due to technical reasons.

B. An extension of the vehicle emissions inspection valid period may be granted by the department for the purpose of compliance with emissions-related manufacturer recall upon a showing, documented by corroborating information from the vehicle manufacturer or dealer, that required parts, tools or required technological information is unavailable. Such extension shall be for a period which reflects the demonstrated need, not to exceed two years.

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PART XII.
On-Road Testing.

9 VAC 5-91-740. General requirements.

A. The on-road testing program shall conform, at a minimum, to the requirements of 40 CFR 51.371 and § 46.2-1178.1 of the Code of Virginia applicable to the program area in which it is employed.

B. The emissions standards for the on-road remote sensing program are those contained in Table III-B in 9 VAC 5-91-180.

C. The on-road testing program and the emissions standards applicable thereto shall apply to affected motor vehicles registered in the program area and any affected motor vehicles operated primarily in the program area.

9 VAC 5-91-741. Financial assistance program.

A. Vehicles identified by on-road testing that fail to meet emissions standards may qualify for financial assistance for emissions-related diagnostic and repair services.

B. Repairs shall be performed by, or under the supervision or approval of, a certified emissions repair technician at a certified emissions repair facility.

C. The department will notify owners of vehicles that violate the remote sensing requirements of 9 VAC 5-91-180. The notification will inform owners of the potential for financial assistance and how to apply for the assistance for repairs to vehicles identified via remote sensing if they meet the eligibility requirements in 9 VAC 5-91-742 and the subsidy percentage of total eligible repair costs.

D. For affected motor vehicles subject to a confirmation test, the department may provide a subsidy of up to 50 percent of the amount spent on emissions related repairs up to a maximum of 50 percent of the waiver amount for repairs performed to comply with the emission standards prescribed in 9 VAC 5-91-160 and 9 VAC 5-91-170. The director may increase or decrease the subsidy percentage depending upon the number of applications received, average expenditure for repair, and availability of funds.

9 VAC 5-91-742. Eligibility requirements for financial assistance.

A. In order to qualify for financial assistance a person shall meet the following requirements, as applicable:

1. Be the registered owner of an eligible vehicle for which all appropriate registration fees for the vehicle with the Department of Motor Vehicles have been paid.

2. Have a household income that is less than or equal to 133% of the federal Poverty Guidelines, as published by the United States Department of Health and Human Services; and

3. Spend a minimum co-payment of one hundred dollars on emissions-related repairs at a certified vehicle emissions repair facility. Money spent to correct tampered emissions control systems or to make a vehicle test ready shall not be included in the co-payment. Repairs shall meet the requirements of 9 VAC 5-91-741 B.

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B. In order to qualify for financial assistance, a vehicle shall be an affected motor vehicle that:

1. Is subject to the provisions of § 46.2-1177 of the Code of Virginia;
2. Can be driven under its own power to the emissions repair facility;
3. Is currently registered or is operated primarily in the program area;
4. Has a current and valid Virginia Motor Vehicle Safety Inspection as provided in §§ 46.2-1157 and 46.2-1158 of the Code of Virginia; and
5. Has been issued a notice of violation under 9 VAC 5-91-750 B.

C. The owners of the following vehicles are not eligible for financial assistance:

1. A vehicle undergoing a transfer of ownership.
2. A vehicle being initially registered in Virginia.
3. A nonconforming vehicle.
4. A vehicle powered exclusively by a clean special fuel.
5. A vehicle owned or operated by a fleet.
6. A vehicle registered to a non-profit organization.
7. A vehicle owned or leased by a commercial entity.
8. A vehicle owned or leased by a government entity.
9. A vehicle registered as an antique vehicle.
10. A vehicle that is unable to complete a motor vehicle emissions inspection according to 9 VAC 5-91-410 through 490.

9 VAC 5-91-743. Application and documentation requirements.

A. Persons seeking financial assistance shall submit a completed application to the department or its designee with original signature.

B. The application shall include copies of the following documents, as applicable:

1. Any invoices for emissions-related repairs performed pursuant to a notification of violation issued under 9 VAC 5-91-750 B prior to applying financial assistance.
2. Any Emissions Repair Data Forms from the Certified Emissions Repair Facility supporting the repair invoices.
3. Any other information as may be required by the department to determine eligibility and/or compliance.

9 VAC 5-91-750. Operating procedures; violation of standards.

A. Remote sensing equipment shall be operated in accordance with the remote sensing equipment

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manufacturers operating instructions and any contract or agreement between the department and the equipment operator.

B. Motor vehicles determined by remote sensing equipment to have exceeded the applicable emissions standard in Table III-B in 9 VAC 5-91-180 shall be considered to have violated such emissions standards.

1. Owners of such motor vehicles will be issued a notice of violation and shall be subject to the civil charges in 9 VAC 5-91-760 unless waived pursuant to this section.

2. Upon a determination by the department that a violation has occurred, motorists will be informed by the department or its representative of the failure to comply with emissions standards and of the dates, times, and places such remote sensing measurement occurred.

C. Civil charges assessed pursuant to this part will be waived if, within 30 days of the date of the notice of the violation, the motor vehicle owner provides proof to the department that:

1. Since the date of the violation, the vehicle has passed, or received a waiver as the result of, a confirmation test; or

2. Within the 12 months prior to the violation, the vehicle had received an emissions inspection waiver.

D. The requirement for an emissions inspection or payment of civil charges, based on a remote sensing failure, may be waived by the department if the affected motor vehicle in question (i) is, by virtue of its registration date, required to have an emissions inspection within three months of the date of the remote sensing measurement that indicates the vehicle has exceeded the applicable standards in Table III-B in 9 VAC 5-91-180; or (ii) has received a waiver within the 12 months prior to the violation.

E. For 1996 and newer model vehicles with OBD, the director may require the vehicle pass an exhaust test (ASM or TSI) in addition to the OBD system test.

F. Notice of violations and civil charges may be issued to any motorist no more than 2 times in any 365 day period for any one motor vehicle.

9 VAC 5-91-760. Schedule of civil charges.

A. No charge shall exceed an adjusted maximum charge of \$450 adjusted annually by using 1990 as the base year and applying the consumer price index.

B. For violations measured in accordance with 9 VAC 5-91-750 B to be up to 150% of the applicable standard, the charge shall not exceed 50% of the adjusted maximum charge in subsection A of this section.

C. For violations measured in accordance with 9 VAC 5-91-750 B to be over 150% of the applicable standard, the charge shall not exceed the adjusted maximum charge in subsection A of this section.

D. Civil charges assessed pursuant to this part shall be paid into the state treasury according to § 46.2-1178.1 of the Code of Virginia.

E. For the purpose of applying a civil charge as prescribed in this section, the degree of violation shall be determined by averaging the highest percentages by which the emissions standard was exceeded for each remote sensing measurement in which at least one of the applicable standards was exceeded.

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PART XIII.
[Repealed.]

9 VAC 5-91-770. [Repealed.]

9 VAC 5-91-780. [Repealed.]

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PART XIV.
ASM Exhaust Emission Standards.9 VAC 5-91-790. ASM start-up standards.

The following standards shall apply upon implementation of the emissions inspection program. The exhaust emissions standards for the following model years are cross-referenced by using the number in the column in Table 14.1 to locate the column that lists the appropriate standards in the look up tables in 9 VAC 5-91-810. Each column reference below corresponds to two columns, one for the ASM 5015 and one for the ASM 2525, in 9 VAC 5-91-810. The test standards are then listed in the appropriate column according to the Equivalent Test Weight.

TABLE 14.1

Light Duty Vehicles			
Model Years	Hydrocarbons 9 VAC 5-91-810 A	Carbon Monoxide 9 VAC 5-91-810 B	Oxides of Nitrogen 9 VAC 5-91-810 C
1996 and later	1	21	41
1991-1995	2	22	42
1983-1990	4	23	43
1981-1982	4	26	43
1980	4	26	48
1977-1979	11	30	48
1975-1976	11	30	50
1973-1974	13	34	50
Light Duty Trucks 1 (6,000 pounds GVWR or less)			
Model Years	Hydrocarbons 9 VAC 5-91-810 A	Carbon Monoxide 9 VAC 5-91-810 B	Oxides of Nitrogen 9 VAC 5-91-810 C
1996 and later (≤3750 LVW)	1	21	41
(>3750 LVW)	2	22	42
1991-1995	5	26	43
1988-1990	7	29	44
1984-1987	7	29	49
1979-1983	11	31	49
1975-1978	12	32	50
Light Duty Trucks 2 (greater than 6,000 pounds GVWR)			
Model Years	Hydrocarbons 9 VAC 5-91-810 A	Carbon Monoxide 9 VAC 5-91-810 B	Oxides of Nitrogen 9 VAC 5-91-810 C
1997 and later (≤5750 LVW)	2	22	42
(>5750 LVW)	5	26	45
1991-1996	5	26	46
1988-1990	7	29	47
1984-1987	7	29	49
1979-1983	11	31	49
1975-1978	12	32	50

9 VAC 5-91-800. ASM final standards.

The following standards shall apply except as specifically determined according to 9 VAC 5-91-170.

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The exhaust emissions standards for the following model years are cross-referenced by using the number in the column in Table 14.2 to locate the column that lists the appropriate standards in the tables in 9 VAC 5-91-810. Each column reference below corresponds to two columns, one for the ASM 5015 and one for the ASM 2525, in 9 VAC 5-91-810. The test standards are then listed in the appropriate column according to the equivalent test weight.

TABLE 14.2

Light Duty Vehicles			
Model Years	Hydrocarbons 9 VAC 5-91-810 A	Carbon Monoxide 9 VAC 5-91-810 B	Oxides of Nitrogen 9 VAC 5-91-810 C
1996 and later	1	21	41
1983-1995	1	21	41
1981-1982	1	23	41
1980	1	23	45
1977-1979	6	27	45
1975-1976	6	27	48
Light Duty Trucks 1 (6,000 pounds GVWR or less)			
Model Years	Hydrocarbons 9 VAC 5-91-810 A	Carbon Monoxide 9 VAC 5-91-810 B	Oxides of Nitrogen 9 VAC 5-91-810 C
1996 and later	1	21	41
(≤3750 LVW)	1	21	41
(>3750 LVW)	3	24	42
1988-1995	3	24	46
1984-1987	8	28	46
1979-1983	9	29	48
1975-1978			
Light Duty Trucks 2 (greater than 6,000 pounds GVWR)			
Model Years	Hydrocarbons 9 VAC 5-91-810 A	Carbon Monoxide 9 VAC 5-91-810 B	Oxides of Nitrogen 9 VAC 5-91-810 C
1997 and later	1	21	41
(≤5750 LVW)	1	21	41
(>5750 LVW)	3	24	44
1988-1996	3	24	46
1984-1987	8	28	46
1979-1983	9	29	48
1975-1978			

9 VAC 5-91-810. ASM 2525 and 5015 Concentration Tables.

A. ASM 2525 and ASM 5015 Hydrocarbon Table (ppm C6)

Column ETW	1 5015	1 2525	2 5015	2 2525	3 5015	3 2525	4 5015	4 2525
1750	142	136	224	216	257	249	291	282
1875	134	129	212	205	243	236	275	266
2000	127	123	201	194	230	223	260	252
2125	121	116	191	184	219	212	246	239
2250	115	111	182	175	208	201	234	227
2375	109	106	173	167	198	192	223	216
2500	105	101	166	160	189	183	212	206
2625	100	97	159	153	181	175	203	197
2750	96	93	152	147	173	168	194	189
2875	92	89	146	141	167	161	187	181
3000	89	86	141	136	160	155	180	174
3125	86	83	136	132	155	150	173	168
3250	83	80	132	127	149	145	167	162
3375	81	78	128	123	145	140	162	157
3500	78	76	124	120	140	136	157	152
3625	76	74	120	117	136	132	152	148
3750	74	72	117	114	133	129	148	144
3875	72	70	114	111	129	125	144	140
4000	71	68	112	108	126	122	140	137
4125	69	67	109	106	123	119	137	133
4250	67	65	107	103	120	117	134	130
4375	66	64	104	101	118	114	131	127
4500	65	63	102	99	115	112	128	124

Column ETW	1 5015	1 2525	2 5015	2 2525	3 5015	3 2525	4 5015	4 2525
4625	63	61	100	97	113	109	125	122
4750	62	60	98	95	110	107	122	119
4875	61	59	96	93	108	105	120	117
5000	60	58	94	92	106	103	117	114
5125	58	57	93	90	104	101	115	112
5250	57	56	91	88	102	99	112	110
5375	56	55	89	86	100	97	110	107
5500	55	54	87	85	98	95	108	105
5625	54	53	86	83	96	93	106	103
5750	53	52	84	82	94	91	104	101
5875	52	51	83	80	92	90	102	99
6000	51	50	81	79	90	88	100	97
6125	50	49	80	78	89	86	98	95
6250	50	48	79	76	87	85	96	94
6375	49	48	77	75	86	84	95	92
6500	48	47	76	74	85	83	93	91
6625	48	46	76	74	84	82	92	90
6750	47	46	75	73	83	81	91	89
6875	47	46	75	73	83	81	91	89
7000	47	46	74	72	83	80	91	88
7125	47	46	74	72	82	80	90	88
7250	47	46	74	72	82	80	90	88
7375	47	46	74	72	82	80	90	88
7500	47	46	74	72	82	80	90	88

Column ETW	5 5015	5 2525	6 5015	6 2525	7 5015	7 2525	8 5015	8 2525
1750	324	315	374	364	390	381	407	397
1875	306	297	353	344	368	359	384	375
2000	289	281	333	325	348	339	363	354
2125	274	267	316	308	329	321	343	335
2250	260	253	299	292	312	305	325	318
2375	247	241	284	277	297	290	309	302
2500	236	230	271	264	283	276	294	288
2625	225	219	259	252	270	263	281	274
2750	216	210	247	241	258	252	269	262
2875	207	201	237	231	247	241	257	251
3000	199	194	228	222	237	232	247	241
3125	191	186	219	214	228	223	238	232
3250	185	180	211	206	220	215	229	224
3375	179	174	204	199	213	208	221	216
3500	173	169	198	193	206	201	214	209
3625	168	164	192	187	200	195	207	203
3750	163	159	186	182	194	189	201	197
3875	159	155	181	177	188	184	196	191
4000	155	151	176	172	183	179	191	186
4125	151	147	172	168	179	175	186	181
4250	147	143	167	164	174	170	181	177
4375	144	140	164	160	170	166	177	173
4500	141	137	160	156	166	162	172	169

Column ETW	5 5015	5 2525	6 5015	6 2525	7 5015	7 2525	8 5015	8 2525
4625	137	134	156	152	162	159	169	165
4750	134	131	153	149	159	155	165	161
4875	132	128	149	146	155	152	161	157
5000	129	126	146	143	152	148	157	154
5125	126	123	143	139	148	145	154	150
5250	123	120	140	136	145	142	150	147
5375	121	118	137	133	142	139	147	144
5500	118	115	134	130	139	136	144	141
5625	116	113	131	128	136	133	141	138
5750	113	111	128	125	133	130	138	135
5875	111	108	125	122	130	127	135	132
6000	109	106	123	120	127	124	132	129
6125	107	104	120	118	125	122	129	126
6250	105	102	118	115	123	120	127	124
6375	103	101	116	113	120	118	125	122
6500	102	99	114	112	119	116	123	120
6625	101	98	113	110	117	114	121	119
6750	100	97	112	109	116	113	120	117
6875	99	97	111	109	115	113	119	117
7000	99	96	111	108	115	112	119	116
7125	98	96	111	108	115	112	119	116
7250	98	96	111	108	115	112	119	116
7375	98	96	111	108	115	112	119	116
7500	98	96	111	108	115	112	119	116

Column ETW	9 5015	9 2525	10 5015	10 2525	11 5015	11 2525	12 5015	12 2525
1750	457	447	706	694	774	761	843	828
1875	431	421	665	653	729	717	794	780
2000	407	398	627	616	688	676	749	736
2125	385	376	592	582	650	638	707	695
2250	365	357	560	551	615	604	669	658
2375	346	339	531	522	583	573	635	624
2500	329	322	505	496	554	544	603	593
2625	314	307	481	472	528	518	574	564
2750	300	294	459	451	503	495	548	539
2875	287	281	439	431	481	473	524	515
3000	276	270	420	413	461	453	502	493
3125	265	260	404	397	443	435	482	474
3250	256	250	388	382	426	419	464	456
3375	247	241	374	368	411	404	447	440
3500	239	234	362	355	397	390	432	424
3625	231	226	350	344	384	377	418	411
3750	224	220	339	333	372	365	405	398
3875	218	213	329	323	361	355	393	386
4000	212	208	320	314	351	345	382	375
4125	206	202	311	305	341	335	371	365
4250	201	197	303	297	332	326	361	355
4375	196	192	295	290	323	318	352	346
4500	192	188	287	282	315	310	343	337

Column ETW	9 5015	9 2525	10 5015	10 2525	11 5015	11 2525	12 5015	12 2525
4625	187	183	280	275	308	302	335	329
4750	183	179	273	269	300	295	327	321
4875	179	175	267	262	293	288	319	313
5000	175	171	260	256	286	281	311	305
5125	171	167	254	250	279	274	304	298
5250	167	163	248	244	272	267	296	291
5375	163	159	242	238	266	261	289	284
5500	159	156	236	232	259	255	282	277
5625	156	152	231	226	253	248	276	271
5750	152	149	225	221	247	243	269	264
5875	149	146	220	216	241	237	263	258
6000	146	143	215	211	236	232	257	252
6125	143	140	210	206	231	227	251	247
6250	140	137	206	202	226	222	246	242
6375	138	135	202	198	222	218	242	237
6500	136	133	199	195	218	214	238	233
6625	134	131	196	192	215	211	234	230
6750	132	129	194	190	213	209	232	227
6875	132	129	193	189	211	207	230	225
7000	131	128	192	188	211	207	229	225
7125	131	128	192	188	211	206	229	225
7250	131	128	192	188	211	206	229	225
7375	131	128	192	188	211	206	229	225
7500	131	128	192	188	211	206	229	225

Column ETW	13 5015	13 2525
1750	1118	1098
1875	1052	1034
2000	992	975
2125	938	921
2250	887	872
2375	841	827
2500	800	786
2625	761	748
2750	726	714
2875	695	683
3000	666	654
3125	639	628
3250	615	604
3375	593	583
3500	573	563
3625	554	544
3750	537	527
3875	521	512
4000	506	497
4125	492	484
4250	479	471
4375	467	459
4500	455	447

Column ETW	13 5015	13 2525
4625	444	436
4750	433	425
4875	423	415
5000	412	405
5125	402	395
5250	393	386
5375	383	376
5500	374	367
5625	365	359
5750	357	350
5875	348	342
6000	341	334
6125	333	327
6250	326	320
6375	320	314
6500	315	309
6625	310	304
6750	307	301
6875	305	299
7000	304	298
7125	304	298
7250	304	298
7375	304	298
7500	304	298

B. ASM 2525 and ASM 5015 Carbon Monoxide Table (% CO)

Column ETW	21 5015	21 2525	22 5015	22 2525	23 5015	23 2525	24 5015	24 2525
1750	0.80	0.77	1.26	1.22	1.64	1.83	2.02	2.43
1875	0.75	0.73	1.19	1.16	1.55	1.72	1.91	2.29
2000	0.71	0.69	1.13	1.09	1.47	1.63	1.81	2.17
2125	0.68	0.66	1.07	1.04	1.39	1.54	1.71	2.05
2250	0.64	0.62	1.02	0.99	1.32	1.47	1.62	1.94
2375	0.61	0.59	0.97	0.94	1.26	1.39	1.54	1.85
2500	0.59	0.57	0.93	0.90	1.20	1.33	1.47	1.76
2625	0.56	0.54	0.89	0.86	1.15	1.27	1.41	1.68
2750	0.54	0.52	0.85	0.82	1.10	1.21	1.34	1.60
2875	0.52	0.50	0.82	0.79	1.05	1.16	1.29	1.54
3000	0.50	0.48	0.79	0.76	1.01	1.12	1.24	1.48
3125	0.48	0.46	0.76	0.73	0.98	1.08	1.19	1.42
3250	0.46	0.45	0.73	0.71	0.94	1.04	1.15	1.37
3375	0.45	0.43	0.71	0.69	0.91	1.00	1.11	1.32
3500	0.44	0.42	0.69	0.67	0.88	0.97	1.08	1.28
3625	0.42	0.41	0.67	0.65	0.86	0.94	1.05	1.24
3750	0.41	0.40	0.65	0.63	0.83	0.92	1.02	1.20
3875	0.40	0.39	0.63	0.61	0.81	0.89	0.99	1.17
4000	0.39	0.38	0.62	0.60	0.79	0.87	0.96	1.14
4125	0.38	0.37	0.60	0.58	0.77	0.85	0.94	1.11
4250	0.37	0.36	0.59	0.57	0.75	0.83	0.92	1.08
4375	0.36	0.35	0.58	0.56	0.74	0.81	0.89	1.06
4500	0.36	0.35	0.57	0.55	0.72	0.79	0.87	1.03

Column ETW	21 5015	21 2525	22 5015	22 2525	23 5015	23 2525	24 5015	24 2525
4625	0.35	0.34	0.55	0.54	0.70	0.77	0.85	1.01
4750	0.34	0.33	0.54	0.53	0.69	0.76	0.84	0.99
4875	0.34	0.33	0.53	0.52	0.67	0.74	0.82	0.97
5000	0.33	0.32	0.52	0.51	0.66	0.73	0.80	0.95
5125	0.32	0.31	0.51	0.50	0.65	0.71	0.78	0.92
5250	0.32	0.31	0.50	0.49	0.63	0.70	0.77	0.90
5375	0.31	0.30	0.49	0.48	0.62	0.68	0.75	0.89
5500	0.30	0.30	0.48	0.47	0.61	0.67	0.73	0.87
5625	0.30	0.29	0.47	0.46	0.59	0.65	0.72	0.85
5750	0.29	0.29	0.46	0.45	0.58	0.64	0.70	0.83
5875	0.29	0.28	0.45	0.44	0.57	0.63	0.69	0.81
6000	0.28	0.28	0.44	0.44	0.56	0.62	0.67	0.80
6125	0.28	0.27	0.44	0.43	0.55	0.61	0.66	0.78
6250	0.27	0.27	0.43	0.42	0.54	0.60	0.65	0.77
6375	0.27	0.26	0.42	0.42	0.53	0.59	0.64	0.76
6500	0.26	0.26	0.42	0.41	0.52	0.58	0.63	0.74
6625	0.26	0.26	0.41	0.41	0.52	0.57	0.62	0.73
6750	0.26	0.26	0.41	0.41	0.51	0.57	0.61	0.73
6875	0.26	0.25	0.40	0.40	0.51	0.56	0.61	0.72
7000	0.25	0.25	0.40	0.40	0.51	0.56	0.61	0.72
7125	0.25	0.25	0.40	0.40	0.51	0.56	0.61	0.72
7250	0.25	0.25	0.40	0.40	0.50	0.56	0.61	0.72
7375	0.25	0.25	0.40	0.40	0.50	0.56	0.61	0.72
7500	0.25	0.25	0.40	0.40	0.50	0.56	0.61	0.72

Column ETW	25 5015	25 2525	26 5015	26 2525	27 5015	27 2525	28 5015	28 2525
1750	2.21	2.73	2.78	3.64	2.97	3.94	3.16	4.24
1875	2.09	2.58	2.63	3.43	2.81	3.71	2.98	4.00
2000	1.97	2.43	2.48	3.24	2.65	3.51	2.82	3.77
2125	1.87	2.30	2.35	3.06	2.51	3.32	2.67	3.57
2250	1.77	2.18	2.23	2.90	2.38	3.14	2.53	3.38
2375	1.69	2.07	2.12	2.76	2.26	2.98	2.40	3.21
2500	1.61	1.97	2.02	2.62	2.15	2.84	2.29	3.05
2625	1.53	1.88	1.92	2.50	2.05	2.70	2.18	2.91
2750	1.47	1.80	1.84	2.39	1.96	2.58	2.09	2.78
2875	1.41	1.72	1.76	2.29	1.88	2.47	2.00	2.66
3000	1.35	1.66	1.69	2.19	1.80	2.37	1.92	2.55
3125	1.30	1.59	1.63	2.11	1.74	2.28	1.84	2.45
3250	1.26	1.53	1.57	2.03	1.67	2.20	1.78	2.36
3375	1.21	1.48	1.52	1.96	1.62	2.12	1.72	2.28
3500	1.17	1.43	1.47	1.89	1.56	2.05	1.66	2.20
3625	1.14	1.39	1.42	1.84	1.52	1.98	1.61	2.13
3750	1.11	1.35	1.38	1.78	1.47	1.92	1.56	2.07
3875	1.08	1.31	1.34	1.73	1.43	1.87	1.52	2.01
4000	1.05	1.28	1.31	1.68	1.39	1.82	1.48	1.95
4125	1.02	1.24	1.27	1.64	1.36	1.77	1.44	1.90
4250	1.00	1.21	1.24	1.60	1.32	1.72	1.40	1.85
4375	0.97	1.18	1.21	1.56	1.29	1.68	1.37	1.81
4500	0.95	1.16	1.18	1.52	1.26	1.64	1.34	1.76

Column ETW	25 5015	25 2525	26 5015	26 2525	27 5015	27 2525	28 5015	28 2525
4625	0.93	1.13	1.15	1.48	1.23	1.60	1.30	1.72
4750	0.91	1.10	1.13	1.45	1.20	1.57	1.28	1.68
4875	0.89	1.08	1.10	1.42	1.17	1.53	1.25	1.64
5000	0.87	1.05	1.08	1.38	1.15	1.49	1.22	1.60
5125	0.85	1.03	1.05	1.35	1.12	1.46	1.19	1.57
5250	0.83	1.01	1.03	1.32	1.10	1.43	1.16	1.53
5375	0.81	0.99	1.01	1.29	1.07	1.39	1.14	1.50
5500	0.80	0.97	0.99	1.26	1.05	1.36	1.11	1.46
5625	0.78	0.94	0.97	1.24	1.03	1.33	1.09	1.43
5750	0.76	0.92	0.94	1.21	1.01	1.30	1.07	1.40
5875	0.75	0.91	0.92	1.18	0.98	1.27	1.04	1.37
6000	0.73	0.89	0.91	1.16	0.96	1.25	1.02	1.34
6125	0.72	0.87	0.89	1.13	0.94	1.22	1.00	1.31
6250	0.71	0.85	0.87	1.11	0.93	1.20	0.98	1.28
6375	0.69	0.84	0.86	1.09	0.91	1.18	0.96	1.26
6500	0.68	0.83	0.84	1.08	0.90	1.16	0.95	1.24
6625	0.67	0.82	0.83	1.06	0.88	1.14	0.94	1.23
6750	0.67	0.81	0.82	1.05	0.88	1.13	0.93	1.21
6875	0.66	0.80	0.82	1.04	0.87	1.12	0.92	1.20
7000	0.66	0.80	0.82	1.04	0.87	1.12	0.92	1.20
7125	0.66	0.80	0.81	1.04	0.87	1.12	0.92	1.20
7250	0.66	0.80	0.81	1.04	0.86	1.12	0.92	1.20
7375	0.66	0.80	0.81	1.04	0.86	1.12	0.92	1.20
7500	0.66	0.80	0.81	1.04	0.86	1.12	0.92	1.20

Column ETW	29 5015	29 2525	30 5015	30 2525	31 5015	31 2525	32 5015	32 2525
1750	3.54	4.85	3.92	5.45	4.31	6.06	5.07	7.26
1875	3.34	4.57	3.70	5.14	4.06	5.70	4.78	6.84
2000	3.16	4.31	3.49	4.85	3.83	5.38	4.51	6.45
2125	2.99	4.08	3.31	4.58	3.63	5.09	4.26	6.10
2250	2.83	3.86	3.13	4.34	3.44	4.82	4.04	5.78
2375	2.69	3.66	2.98	4.12	3.26	4.57	3.83	5.48
2500	2.56	3.48	2.83	3.91	3.10	4.35	3.65	5.21
2625	2.44	3.32	2.70	3.73	2.96	4.14	3.48	4.96
2750	2.33	3.17	2.58	3.56	2.83	3.95	3.32	4.73
2875	2.23	3.03	2.47	3.41	2.71	3.78	3.18	4.53
3000	2.14	2.91	2.37	3.27	2.60	3.62	3.05	4.34
3125	2.06	2.79	2.28	3.14	2.50	3.48	2.93	4.17
3250	1.99	2.69	2.20	3.02	2.40	3.35	2.82	4.01
3375	1.92	2.60	2.12	2.91	2.32	3.23	2.72	3.87
3500	1.86	2.51	2.05	2.82	2.24	3.12	2.63	3.74
3625	1.80	2.43	1.99	2.73	2.17	3.02	2.55	3.62
3750	1.74	2.36	1.93	2.64	2.11	2.93	2.47	3.51
3875	1.69	2.29	1.87	2.57	2.05	2.85	2.40	3.40
4000	1.65	2.22	1.82	2.49	1.99	2.77	2.33	3.31
4125	1.61	2.16	1.77	2.43	1.94	2.69	2.27	3.22
4250	1.56	2.11	1.73	2.36	1.89	2.62	2.21	3.13
4375	1.53	2.06	1.68	2.31	1.84	2.55	2.16	3.05
4500	1.49	2.01	1.64	2.25	1.80	2.49	2.11	2.98

Column ETW	29 5015	29 2525	30 5015	30 2525	31 5015	31 2525	32 5015	32 2525
4625	1.46	1.96	1.61	2.19	1.76	2.43	2.06	2.90
4750	1.42	1.91	1.57	2.14	1.72	2.37	2.01	2.83
4875	1.39	1.87	1.53	2.09	1.68	2.32	1.96	2.77
5000	1.36	1.82	1.50	2.04	1.64	2.26	1.92	2.70
5125	1.33	1.78	1.46	2.00	1.60	2.21	1.87	2.64
5250	1.30	1.74	1.43	1.95	1.56	2.16	1.83	2.58
5375	1.27	1.70	1.40	1.90	1.53	2.11	1.79	2.51
5500	1.24	1.66	1.37	1.86	1.49	2.06	1.75	2.46
5625	1.21	1.62	1.34	1.82	1.46	2.01	1.71	2.40
5750	1.19	1.59	1.31	1.78	1.43	1.96	1.67	2.34
5875	1.16	1.55	1.28	1.74	1.40	1.92	1.63	2.29
6000	1.14	1.52	1.25	1.70	1.37	1.88	1.60	2.24
6125	1.11	1.49	1.23	1.66	1.34	1.84	1.57	2.19
6250	1.09	1.46	1.20	1.63	1.31	1.80	1.54	2.15
6375	1.07	1.43	1.18	1.60	1.29	1.77	1.51	2.11
6500	1.06	1.41	1.16	1.57	1.27	1.74	1.48	2.07
6625	1.04	1.39	1.15	1.55	1.25	1.72	1.46	2.04
6750	1.03	1.37	1.14	1.54	1.24	1.70	1.45	2.02
6875	1.02	1.36	1.13	1.52	1.23	1.68	1.44	2.00
7000	1.02	1.36	1.12	1.52	1.23	1.68	1.43	2.00
7125	1.02	1.36	1.12	1.52	1.22	1.68	1.43	2.00
7250	1.02	1.36	1.12	1.52	1.22	1.68	1.43	2.00
7375	1.02	1.36	1.12	1.52	1.22	1.68	1.43	2.00
7500	1.02	1.36	1.12	1.52	1.22	1.68	1.43	2.00

Column ETW	33 5015	33 2525	34 5015	34 2525
1750	5.26	7.44	8.02	9.90
1875	4.96	7.05	7.56	9.90
2000	4.68	6.68	7.14	9.90
2125	4.43	6.34	6.75	9.66
2250	4.20	6.00	6.40	9.14
2375	3.98	5.69	6.07	8.67
2500	3.79	5.41	5.78	8.25
2625	3.61	5.15	5.51	7.85
2750	3.45	4.92	5.26	7.50
2875	3.30	4.70	5.03	7.17
3000	3.17	4.51	4.83	6.87
3125	3.04	4.33	4.64	6.60
3250	2.93	4.17	4.47	6.35
3375	2.83	4.02	4.31	6.13
3500	2.73	3.88	4.17	5.92
3625	2.65	3.76	4.04	5.73
3750	2.57	3.64	3.91	5.55
3875	2.49	3.54	3.80	5.39
4000	2.43	3.44	3.70	5.24
4125	2.36	3.34	3.60	5.09
4250	2.30	3.25	3.51	4.96
4375	2.24	3.17	3.42	4.83
4500	2.19	3.09	3.34	4.71

Column ETW	33 5015	33 2525	34 5015	34 2525
4625	2.14	3.02	3.26	4.60
4750	2.09	2.95	3.18	4.49
4875	2.04	2.87	3.11	4.38
5000	1.99	2.81	3.03	4.28
5125	1.95	2.74	2.97	4.18
5250	1.90	2.68	2.90	4.08
5375	1.86	2.61	2.83	3.98
5500	1.82	2.55	2.77	3.89
5625	1.77	2.49	2.70	3.80
5750	1.74	2.43	2.64	3.71
5875	1.70	2.38	2.59	3.62
6000	1.66	2.33	2.53	3.54
6125	1.63	2.28	2.48	3.47
6250	1.60	2.23	2.43	3.40
6375	1.57	2.19	2.39	3.34
6500	1.54	2.15	2.35	3.28
6625	1.52	2.12	2.32	3.23
6750	1.50	2.10	2.29	3.20
6875	1.49	2.08	2.28	3.17
7000	1.49	2.08	2.27	3.17
7125	1.49	2.08	2.27	3.17
7250	1.49	2.08	2.27	3.17
7375	1.49	2.08	2.27	3.17
7500	1.49	2.08	2.27	3.17

C. ASM 2525 and ASM 5015 Nitric Oxide Table (ppm NO)

Column ETW	41 5015	41 2525	42 5015	42 2525	43 5015	43 2525	44 5015	44 2525
1750	1212	1095	1819	1642	2272	2114	2725	2587
1875	1142	1031	1713	1547	2181	1991	2649	2435
2000	1077	973	1616	1460	2058	1877	2499	2295
2125	1018	920	1527	1380	1944	1774	2360	2167
2250	964	871	1446	1307	1839	1678	2232	2050
2375	915	827	1372	1240	1744	1592	2115	1943
2500	869	786	1304	1179	1657	1512	2009	1845
2625	828	749	1242	1123	1577	1440	1912	1756
2750	791	715	1186	1072	1504	1374	1823	1675
2875	756	684	1134	1026	1438	1313	1742	1601
3000	725	656	1088	984	1378	1258	1668	1533
3125	696	630	1045	945	1323	1208	1601	1471
3250	670	607	1006	910	1273	1163	1539	1415
3375	647	585	970	878	1227	1121	1483	1363
3500	625	566	937	848	1184	1082	1432	1316
3625	605	547	907	821	1146	1047	1384	1273
3750	586	531	879	796	1110	1014	1340	1233
3875	569	515	853	773	1077	984	1300	1195
4000	553	501	829	751	1046	956	1262	1161
4125	538	487	807	731	1017	930	1227	1128
4250	524	475	786	712	990	905	1194	1098
4375	510	463	766	694	964	882	1162	1069
4500	498	451	747	677	939	859	1132	1042

Column ETW	41 5015	41 2525	42 5015	42 2525	43 5015	43 2525	44 5015	44 2525
4625	486	440	728	661	916	838	1104	1015
4750	474	430	711	645	893	818	1076	990
4875	463	420	694	630	872	798	1049	966
5000	452	410	677	615	850	778	1023	942
5125	441	400	661	600	830	760	998	919
5250	431	391	646	586	810	741	974	896
5375	420	382	631	573	790	723	950	874
5500	410	373	616	559	771	706	926	853
5625	401	364	601	546	752	689	904	832
5750	391	356	587	534	734	673	882	812
5875	383	348	574	522	717	657	860	793
6000	374	340	561	510	701	642	840	774
6125	366	333	549	499	685	628	822	757
6250	359	326	538	489	671	615	804	741
6375	352	320	528	480	658	604	788	727
6500	346	315	519	473	647	593	775	714
6625	341	311	512	466	638	585	763	704
6750	338	307	507	461	631	578	755	696
6875	335	305	503	458	626	574	749	691
7000	335	305	502	457	624	573	747	689
7125	335	305	502	457	625	573	747	689
7250	335	305	502	457	625	573	747	689
7375	335	305	502	457	625	573	747	689
7500	335	305	502	457	625	573	747	689

Column ETW	45 5015	45 2525	46 5015	46 2525	47 5015	47 2525	48 5015	48 2525
1750	3178	3060	3631	3532	4084	4005	4990	4950
1875	3117	2879	3586	3323	4054	3767	4990	4655
2000	2941	2713	3383	3131	3824	3548	4707	4384
2125	2776	2561	3192	2955	3609	3348	4441	4136
2250	2625	2422	3018	2794	3411	3165	4197	3909
2375	2487	2295	2859	2646	3231	2998	3974	3701
2500	2361	2179	2714	2512	3066	2845	3771	3512
2625	2246	2073	2581	2389	2916	2706	3585	3339
2750	2142	1976	2460	2277	2779	2579	3416	3181
2875	2046	1888	2350	2175	2654	2463	3261	3037
3000	1959	1808	2249	2082	2539	2357	3120	2906
3125	1879	1734	2157	1997	2435	2260	2992	2787
3250	1806	1667	2073	1920	2340	2172	2874	2677
3375	1740	1606	1997	1849	2253	2092	2767	2577
3500	1679	1550	1926	1784	2174	2018	2668	2486
3625	1623	1498	1862	1724	2100	1950	2578	2401
3750	1571	1451	1802	1669	2033	1887	2494	2323
3875	1523	1407	1747	1618	1970	1829	2417	2251
4000	1479	1365	1695	1570	1912	1775	2345	2184
4125	1437	1327	1647	1526	1857	1724	2277	2122
4250	1398	1291	1602	1484	1806	1677	2214	2063
4375	1360	1257	1559	1444	1757	1632	2154	2007
4500	1325	1224	1518	1406	1711	1589	2096	1953

Column ETW	45 5015	45 2525	46 5015	46 2525	47 5015	47 2525	48 5015	48 2525
4625	1291	1193	1479	1370	1666	1548	2042	1903
4750	1259	1163	1441	1336	1624	1508	1989	1854
4875	1227	1134	1405	1302	1583	1470	1938	1806
5000	1196	1106	1369	1269	1542	1433	1889	1760
5125	1167	1078	1335	1237	1503	1397	1840	1715
5250	1138	1051	1301	1206	1465	1362	1793	1672
5375	1109	1025	1269	1176	1428	1327	1747	1629
5500	1082	1000	1237	1147	1392	1294	1703	1587
5625	1055	975	1206	1118	1357	1261	1659	1547
5750	1029	951	1176	1090	1323	1230	1617	1508
5875	1004	928	1147	1064	1290	1199	1577	1471
6000	980	906	1120	1039	1259	1171	1539	1435
6125	958	886	1094	1015	1230	1144	1503	1401
6250	937	867	1070	993	1203	1119	1469	1371
6375	919	850	1049	973	1179	1096	1439	1343
6500	902	835	1030	956	1158	1077	1413	1318
6625	889	823	1014	941	1140	1060	1391	1298
6750	879	813	1003	931	1127	1048	1374	1283
6875	872	807	995	924	1118	1040	1364	1273
7000	870	805	992	921	1115	1037	1360	1269
7125	870	805	992	921	1115	1037	1360	1269
7250	870	805	992	921	1115	1037	1360	1269
7375	870	805	992	921	1115	1037	1360	1269
7500	870	805	992	921	1115	1037	1360	1269

Column ETW	49		50		51	
	5015	2525	5015	2525	5015	2525
1750	4990	4960	4990	4980	4990	4990
1875	4990	4738	4990	4906	4990	4990
2000	4778	4535	4919	4838	4990	4990
2125	4578	4349	4853	4776	4990	4990
2250	4395	4179	4792	4720	4990	4990
2375	4228	4024	4736	4668	4990	4990
2500	4076	3881	4685	4620	4990	4990
2625	3936	3752	4639	4577	4990	4990
2750	3809	3579	4596	4374	4990	4772
2875	3669	3417	4484	4176	4892	4556
3000	3510	3270	4290	3996	4680	4359
3125	3366	3135	4114	3832	4488	4180
3250	3234	3012	3952	3681	4311	4016
3375	3113	2899	3804	3544	4150	3866
3500	3002	2796	3669	3418	4002	3728
3625	2900	2701	3544	3302	3867	3602
3750	2806	2614	3429	3195	3741	3485
3875	2719	2533	3323	3096	3625	3377
4000	2638	2457	3224	3003	3517	3276
4125	2562	2387	3131	2917	3416	3182
4250	2490	2320	3044	2836	3321	3094
4375	2423	2258	2961	2759	3230	3010
4500	2359	2198	2883	2686	3145	2930

Column ETW	49 5015	49 2525	50 5015	50 2525	51 5015	51 2525
4625	2297	2140	2807	2616	3063	2854
4750	2238	2085	2735	2549	2983	2780
4875	2180	2032	2665	2483	2907	2709
5000	2125	1980	2597	2420	2833	2640
5125	2070	1930	2530	2359	2760	2573
5250	2017	1881	2466	2298	2690	2507
5375	1966	1833	2403	2240	2621	2443
5500	1916	1786	2341	2183	2554	2381
5625	1867	1740	2282	2127	2489	2321
5750	1820	1697	2224	2074	2426	2262
5875	1774	1654	2168	2022	2366	2206
6000	1731	1614	2116	1973	2308	2152
6125	1690	1577	2066	1927	2254	2102
6250	1653	1542	2020	1884	2204	2056
6375	1619	1510	1979	1846	2159	2014
6500	1590	1483	1943	1813	2119	1977
6625	1565	1460	1913	1785	2087	1947
6750	1546	1443	1890	1764	2062	1924
6875	1534	1432	1875	1750	2046	1909
7000	1530	1428	1870	1745	2040	1904
7125	1531	1428	1874	1745	2045	1904
7250	1531	1428	1874	1745	2045	1904
7375	1531	1428	1874	1745	2045	1904
7500	1531	1428	1874	1745	2045	1904